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# RETROPUBIC PROSTATECTOMY

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We present an analysis stressing the high lights in uccessful retropubic prostatectomy in 40 cases done in a city hospital. From this series, in which a large percentage of the patients were poor risks, we were particularly impressed by (*a*) the smooth convalescence and (*b*) the appearance of the urethra and bladder neck after operation.

## HISTORY

Although the operation has been previously performed in this country [1] and in Europe,[2] it did not capture the fancy of American urologists until after June 1947, when Millin first demonstrated his operation in this country at the Brady Foundation in New York. The feasibility of the operation first became apparent to him during the course of radical cystectomy for carcinoma of the bladder.[3] In removing the bladder transabdominally, he saw no reason why the prostate and seminal vesicles could not be extirpated at the same time without an additional operation via the perineum.

## HEMOSTASIS AND STUDY OF BLOOD VESSELS

A knowledge of the distribution of the blood vessels in this area is necessary for hemostasis. After the peritoneum and retropubic fat have been gently retracted upward away from the symphysis pubis and the prostatovesical junction, a large central vein can be seen arising from a point just underneath the arch of the symphysis pubis and taking a course cephalad over the midportion of the prostate and bladder neck. This vessel is called the superficial branch of the deep dorsal vein of the penis and should be ligated. When ligated, it is apt to give the surgeon a false sense of security, if he feels that the principal vein has been eliminated. In some cases this vein can be retracted laterally out of the field of incision into the prostatic capsule without preliminary ligation. Inasmuch as the veins in this region are large and extremely thin walled, they should be handled and retracted with great care in order not to rupture them. These vessels lie in the folds and layers of the endopelvic fascia, and the distribution of the smaller branches over the anterior aspect of the prostatic capsule varies considerably. When these small branches assume a vertical course over the prostate, some surgeons use the vertical capsular incision in order to avoid injuring them. The formation of the principal veins of this region is contributed to by the two plexuses of veins at the obturator foramen exterior to the obturator internus muscle, by the pudendal plexus and by the deep dorsal vein of the penis. The latter is the principal and most important contributor. As the deep dorsal vein of the penis enters the pelvis after penetrating the urogenital diaphragm it trifurcates into right and left lateral branches and a superior branch which has been previously mentioned. The lateral branches become a mass of large thin-walled veins which hug the lateral aspects of the prostate, prostatovesical junction and the lower portion of the bladder (fig. 1). These constitute what we have referred to as the lateral plexus of the prostate. Inasmuch as these plexuses are so dense and thin walled, it is wise not to use suture ligatures for the control of bleeding from this area. Such bleeding occurs after rough handling and after one has extended a transverse incision laterally incident to delivering a massive gland. Whenever these vessels have been opened it has been our policy to pack the bleeding area rather than resort to ligation or electrocoagulation.

The principal arteries of surgical consideration in this area are branches from the hypogastric or internal iliac artery. It gives off the inferior vesical paired arteries which enter the prostatovesical junction at the lateral and lower aspects of the bladder neck (at 5 and 7 o'clock, fig. 1). Before entering the prostate, these vessels give off smaller anterior capsular arteries which pass over the anterior aspect of the capsule and present no problem in ligation. Ligation of the inferior vesical arteries is carried out under direct vision after the prostate has been enucleated. A mattress or figure of eight suture taken at 5 and 7 o'clock of the bladder neck does this easily, and at the same time they can be made to plicate the bladder neck when the latter is redundant. It has been our practice to apply these sutures whether or not the open ends of the vessels are seen. In one of our earlier cases, we saw no open vessel in this region and consequently used no suture. The patient was returned to the operating room because of secondary bleeding twenty-four hours later. After the blood clots had been removed from the prostatic fossa and the bladder, we discovered the feebly spurting open ends of the inferior vesical arteries at the bladder neck. This has been our only instance of secondary bleeding. It might be well to mention that the secondary operation was done via the retropubic

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From the Department of Urology, Lincoln Hospital, New York.

Read before the Section on Urology at the Ninety-Seventh Annual ion of the American Medical Association, Chicago, June 24, 1948.

[1] Jacobs, L. C., and Casper, E. J.: Urol. & Cutan. Rev. 37: 729, 33.

[2] Van Stockum, W. J.: Zentralbl. f. d. ges. Chir. 2: 41, 1909.

[3] Millin, T.: Personal communication to the author.

route; the bladder was evacuated of clots through the neck of the bladder. This exposure alone could afford the excellent view of the vessels at the neck of the bladder.

PROSTATECTOMY

Before opening the capsule (fig. 2), one places two or three chromic sutures well into the true and false capsules of the prostate at the most distal accessible portion, at the same time underrunning any visible veins. These sutures are tied and left long. Incision into the anterior capsule has been done transversely in all but 3 instances when a vertical incision was used.

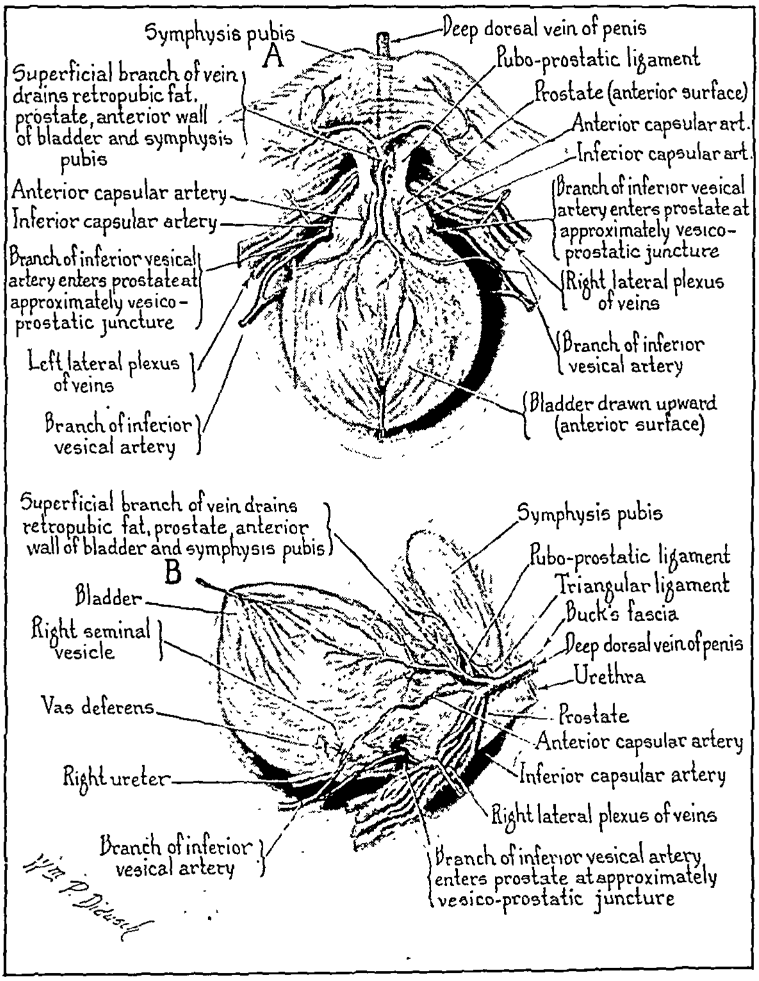
A
Symphysis pubis
Deep dorsal vein of penis
Pubo-prostatic ligament
Prostate (anterior surface)
Anterior capsular art.
Inferior capsular art.
Superficial branch of vein drains retropubic fat, prostate, anterior wall of bladder and symphysis pubis
Anterior capsular artery
Inferior capsular artery
Branch of inferior vesical artery enters prostate at approximately vesico-prostatic juncture
Right lateral plexus of veins
Branch of inferior vesical artery
Left lateral plexus of veins
Branch of inferior vesical artery
Bladder drawn upward (anterior surface)
B
Superficial branch of vein drains retropubic fat, prostate, anterior wall of bladder and symphysis pubis
Symphysis pubis
Pubo-prostatic ligament
Triangular ligament
Buck's fascia
Bladder
Right seminal vesicle
Deep dorsal vein of penis
Urethra
Vas deferens
Prostate
Anterior capsular artery
Right ureter
Inferior capsular artery
Right lateral plexus of veins
Branch of inferior vesical artery
Branch of inferior vesical artery enters prostate at approximately vesico-prostatic juncture

Fig. 1.—Study of the arteries and veins of the retropubic region and the anterior portion of the prostate and the bladder. *A*, view from above. The bladder is shown drawn upward, exposing the anterior surface of the prostate, the puboprostatic ligaments and the artêries and veins of the prostate, symphysis pubis and anterior wall of the bladde. *B*, side view showing the bladder drawn upward; the prostate, puboprostatic ligament (etc.) in relation to the veins and arteries of the prostate, symphysis pubis and the anterior wall of the bladder.

Our preference for the transverse incision is based on the fact that it affords better exposure of the bladder neck. In 3 cases, retropubic prostatectomy was carried out in two stages, cystotomy being necessary to empty the distended bladder of blood clots and urine. After the capsule is opened down to the adenoma, the line of cleavage between the prostate to be removed and the false capsule is followed down to the apex of the gland. When the lateral aspects have been freed, the apex is then dislodged either digitally or with curved scissors, and the prostate is then "peeled off" the circular fibers of the bladder neck under direct vision. A hot laparotomy pad is then placed in the prostatic fossa and allowed to remain for several minutes while the bladder neck is trimmed and the two hemostatic sutures are placed at 5 and 7 o'clock. A V-shaped piece is removed from the floor of the bladder neck only when there is fibrosis or a median bar present. We have not done this as a routine measure and have yet to see our first postoperative stricture (it is two years since our first operation). Should the posterior lobe and capsule be torn away during the enucleation, no problem is encountered, as there are no large vessels in this area to contend with. The rectum can be seen coursing downward, and the seminal vesicles are accessible under the neck of the bladder. We have done one radical retropubic prostatectomy in which we removed the entire prostate, seminal vesicles and a cuff of the bladder neck. After the bladder neck has been treated, the lower portion of the interior of the bladder can be *inspected, and in most* instances the ureteral orifices can be seen. Even in patients with large glands which intrude well into the bladder, there has been no interference with these orifices. The hot pad in the prostatic fossa is then removed, and any open vessels can be seen and tied. We have not resorted to electrocoagulation. The urethral catheter is then passed, and the tip which emerges in the fossa is grasped and brought up into the wound. After the catheter eyes are cleared, the catheter is replaced in the prostatic bed with the tip well up in the bladder. In cases in which there is some oozing from the fossa of the gland, an inflated Foley catheter may be used for compression hemostasis. However, in 3 instances we have seen the inflated catheter slip down in the fossa with consequent emergence of the tip of the catheter out of the bladder. In these cases the tip became lodged under the neck of the bladder (fig. 3). To obviate this complication, one of us (F. P. T.) has devised a catheter which has a tip measuring 2½ inches (6 cm.) from the bag. The catheter is also wire reinforced to prevent the lumen from collapsing when the bag is fully inflated (fig. 4). Compression hemostasis by this method is maintained for several hours only, when the bag is deflated. One of us (F. A. B.) has suggested an open end catheter with a removable tip and eccentric bag which is placed in the bladder (fig. 5). The use of absorbable hemostatic agents around the bag when compression hemostasis is used and packed in the fossa when compression hemostasis is not used has been discontinued by us in our later cases, after the occurrence of calculi with gauze nucleus in 2 of our cases.

Good drainage by catheter is the most important single factor for the postoperative comfort of the patient. After the anterior capsule has been closed with interrupted sutures, the catheter is tested with a hand bulb syringe. Good, water-tight suturing of the capsule need not require layers of sutures. In many instances we have used only two or three interrupted stitches. In approximating the cut ends of the capsule after removing the largest gland, which weighed 173 Gm., we made only three sutures. When good irrigation is assured, the wound is closed in the usual manner with a drain in the prevesical space.

SELECTION OF CASES

In our first series of 23 retropubic prostatectomies,[4] 65 per cent of our subjects were cardiac patients with bundle branch block or auricular fibrillation, whose obstructing prostates weighed from 8 to 110 Gm. There was no selection of patients except for prostatic carcinoma, vesical diverticulum or tumor and the like. Since then the smallest prostate removed weighed 30 Gm. A study of the large veins in this area reveals the proximity of the trifurcation of the deep dorsal vein of the penis to the neck of the bladder when a small gland is present, which increases the hazard of bleeding. Large benign glands, which may or may not intrude into the bladder, are ideally removed by the retropubic method. We found no contraindication for this operation in obese patients. With proper retraction in an obese patient who has a large prostate, the operation can be completed without difficulty. Figure 6 shows such a patient three weeks after leaving the hospital, during which interim he had lost 15 pounds (7 Kg.).

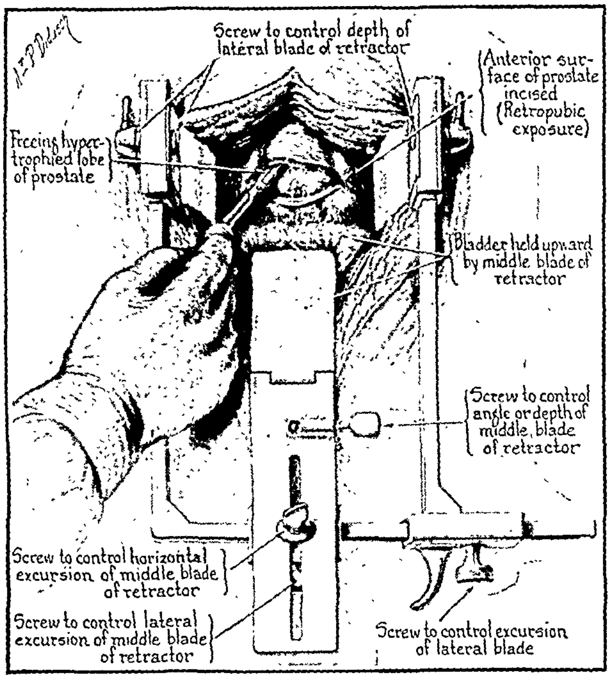
Wm. P. Didusch
Screw to control depth of lateral blade of retractor
Anterior surface of prostate incised (Retropubic exposure)
Freeing hypertrophied lobe of prostate
Bladder held upward by middle blade of retractor
Screw to control angle or depth of middle blade of retractor
Screw to control horizontal excursion of middle blade of retractor
Screw to control lateral excursion of middle blade of retractor
Screw to control excursion of lateral blade

Fig. 2.—Transverse incision into the prostatic capsule.

POSTOPERATIVE COURSE

More than in many major operations, in this operation the comfort of the patient, in Millin's words, "must be seen to be appreciated."[5] This depends on the working condition of the catheter. When the catheter drains freely, one can almost be certain that the patient will have a comfortable postoperative course. Many of our patients received no morphine or meperidine hydrochloride after operation. Free drainage was used, and the bladder was irrigated every half-hour for the first two hours and every two hours thereafter for the first day. If the urine was not too bloody, the patient was allowed out of bed on the second or third day, provided, of course, that there was no medical contraindication. When the catheter is removed on the fifth or sixth day, the patient should be able to void. If he is unable to do so, the catheter should be reinserted, and an additional day or two of catheter drainage should correct this situation. Some British surgeons leave the catheter in for eight or nine days routinely. Our youngest patient, who was 47, voided around his catheter seventeen hours after operation; the catheter was removed, and the patient remained continent with good control thereafter. As a general rule it is easy to reinsert a catheter after the first

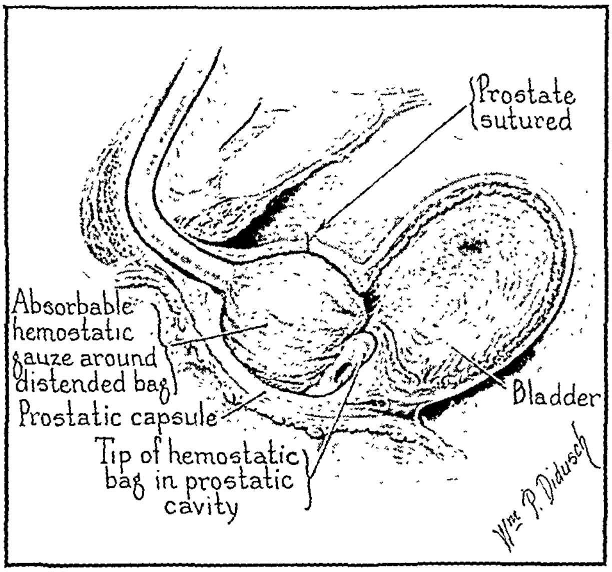
Prostate sutured
Absorbable hemostatic gauze around distended bag
Prostatic capsule
Bladder
Tip of hemostatic bag in prostatic cavity
Wm. P. Didusch

Fig. 3.—Drawing of a complication of retropubic prostatectomy, showing a short-tipped catheter lodged under the neck of the bladder.

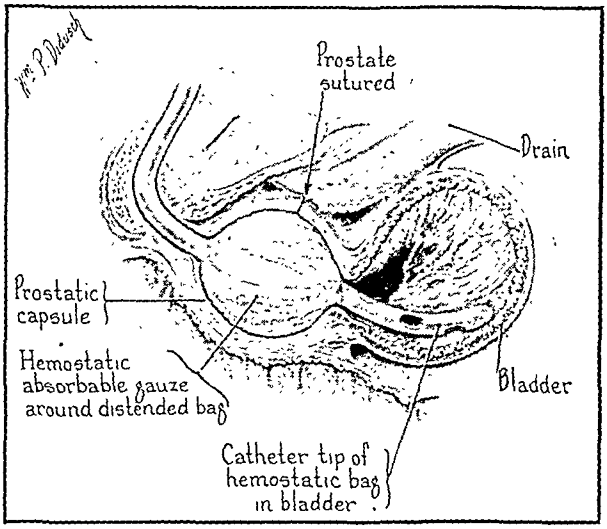
Wm. P. Didusch
Prostate sutured
Drain
Prostatic capsule
Hemostatic absorbable gauze around distended bag
Bladder
Catheter tip of hemostatic bag in bladder

Fig. 4.—Long-tipped catheter suggested by Twinem.

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[4] Beneventi, F. A., and Twinem, F. P.: New York State J. Med. **49**: 623, 1949.

[5] Millin, T.: J. Urol. **59**: 267, 1948.

postoperative day, but some difficulty is met if it is tried within the first twenty-four hours. Because of this, we doubly check the drainage of the catheter while the patient is in the operating room and fix it in position. When a straight catheter is used, a suture is taken in the glans penis or in the prepuce to anchor it in position.

1. *Stress Incontinence.*—In several cases there was some stress incontinence, which responded immediately to muscular exercises, such as the patient's voluntarily starting and stopping the stream three or four times during each voiding. We have had no case of permanent urinary incontinence.

2. *Residual Urine.*—The amount of residual urine varied from 0 to 20 cc. in all cases except 1, in which a running suture was placed in the neck of the bladder. The patient had residual urine of 45 cc. when last seen in our postoperative clinic, four months after operation.

3. *Osteitis Pubis and Periosteitis Pubis.*—These have been unknown in our series.

4. *Epididymitis.*—None of our patients had preliminary vasectomies. Unilateral epididymitis developed in only 1.

5. *Potency.*—All our patients who were potent before operation retained their powers after operation except 1. This includes our oldest patient, who was 88 years of age and who stated that now "the act lasts so long it is tiring."

6. *Postoperative Urethra.*—The endoscopic picture of the posterior urethra is remarkable. The walls are clear and smooth as early as six weeks after operation. Even the floor of the prostatic fossa, which is left open at operation, is firm and smooth.

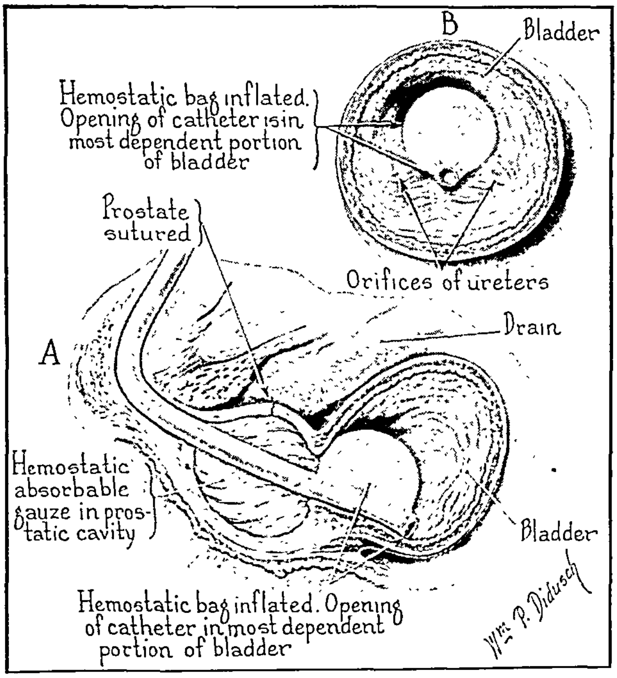
B
Bladder
Hemostatic bag inflated. Opening of catheter is in most dependent portion of bladder
Prostate sutured
Orifices of ureters
Drain
A
Hemostatic absorbable gauze in prostatic cavity
Bladder
Hemostatic bag inflated. Opening of catheter in most dependent portion of bladder
Wm. P. Didusch

Fig. 5.—Catheter suggested by Beneventi.

CONCLUSION

A series of 40 retropubic prostatectomies is presented, which have been done in various ways so that we could learn the most from each step. These were done in a city hospital where patients were admitted generally in an undernourished state and with acute urinary retention. A brief account of the distribution and configuration of the prostatic plexuses of veins, which is so important in retropubic surgery, is presented, and new instruments are introduced. We feel that retropubic prostatectomy, as a rule, should not be done on prostates which weigh less than 30 Gm. and that all large smooth elastic glands are easily and ideally treated by this method. Small prostates are not best removed by this method because of (1) the proximity of the large branches at the trifurcation of the deep dorsal vein of the penis when the gland is small, (2) the difficulty in enucleating small glands and (3) their amenability to treatment by transurethral surgery. It has been necessary for us to do one secondary operation for hemorrhage. The approach here was the same as in the first operation; the bleeders were tied, the fossa was not packed and the bladder was not opened. Another secondary operation was done because of a suprapubic sinus due to impingement of the tip of the catheter under the posterior lip of the bladder neck (fig. 3).

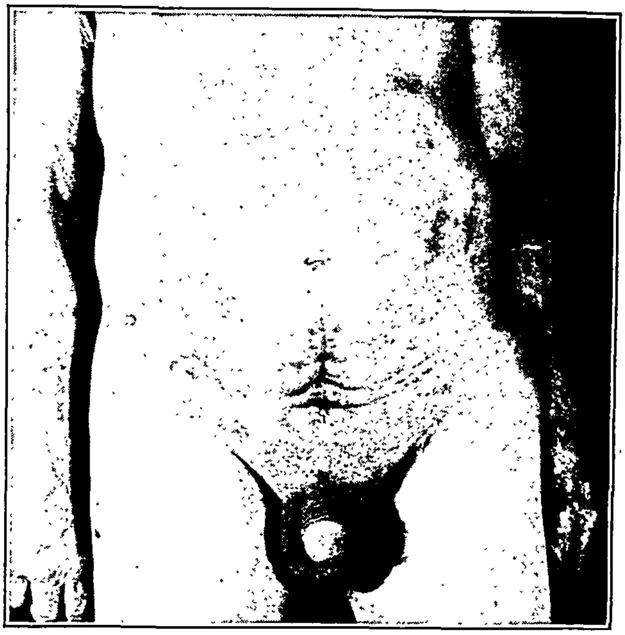

Fig. 6.—View of an obese patient thirty-one days after retropubic prostatectomy. He had lost 15 pounds (7 Kg.) since operation.

Penicillin and the sulfonamide drugs were not administered routinely in this series; yet we encountered no osteitis pubis. No preliminary vasectomy was done, and only 1 patient had postoperative epididymitis. Only 1 patient lost potency, and none was incontinent.

We are particularly impressed by the smooth convalescence of the patients and the satisfactory postoperative appearance of the posterior urethra and bladder neck seen on endoscopic examination. For these reasons, we feel that retropubic prostatectomies should be done in selected cases of large benign hyperplasias of the prostate in preference to other methods. The retropubic method is technically somewhat more difficult than the suprapubic, but its technic can easily be learned with moderate experience.

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## ABSTRACT OF DISCUSSION

Dr. James Peters, Melbourne, Australia: After hearing the paper by Drs. Beneventi and Twinem I think that probably I shall spend a good deal of my time in America learning the technic of retropubic prostatectomy. This paper showed in extensive detail the ramifications of the prostatic plexus. I can really discuss here only one or two points—hemorrhage and stricture. I found hemorrhage at operation in my second case. When I got to the prostatic capsule I found that the diathermy machine was not working. Speed then became essential, and following the method which Dr. Beneventi has shown, the attack from the apex of the gland, I removed the prostate quickly and immediately replaced it with gauze. I was surprised at the conclusion to find that the loss of blood had been small, and I have followed that technic several times. I believe that the results are better, the quicker one can manage to get through a plexus, if it is controlled by suture—which is difficult—and diathermy, after clamps have been applied, then moving quickly through the capsule to enucleate the anterior portion of the gland and replace it by gauze, which I consider a very efficient hemostat. I feel that one method to avoid stricture is to cut out the V section posteriorly. In the 1 case of stricture that I have encountered, I cut laterally on either side and brought down a cuff of mucous membrane and sewed it to the prostatic bed. The long cuff of mucous membrane that comes up with the prostate is usually cut off, but it can be turned down and sewed to the base of the prostate, and I think that will obviate stricture. There is a shelf, which is very pronounced posteriorly at the vesicle neck, and I think that is one method of control of stricture. A method I use in fixing the catheter in the prostatic cavity is to put a suture through the tip and bring it out through the bladder and up through the abdominal wound, cutting it off in seven days, because that makes one certain that the tip of the catheter is held in position.

Dr. Grayson Carroll, St. Louis: Drs. Twinem and Beneventi gave a splendid description of the anatomy in the retropubic approach. The delineation of the blood vessels is especially helpful. Overcoming minor technical difficulties, better use of suction and recognition of anatomy have simplified the retropubic operation for my co-workers and me; we have become quite enthusiastic about it. We have had no deaths. We had 1 case of osteitis pubis.

Dr. Nels F. Ockerblad, Kansas City, Mo.: These experiences with the retropubic operation are illuminating. Drs. Twinem and Beneventi have mastered this operation and have found that it produces results comparable to the more usual procedures. They have pointed out also the pitfalls. The retropubic space, or the space of Retzius, is even today not to be approached lightly. Before going all out for retropubic prostatectomy, it would be well for one to see how patients subjected to that operation are managing after five years. My opinion is that it is not an operation to replace any of the present procedures, but that on occasions it may be an extremely valuable approach.

Dr. Francis P. Twinem, New York: We do not commend a retropubic operation for all types of prostatic disorders. We believe that all urologists should learn to perform this type of operation and feel sure that they will find it exceedingly useful in properly selected cases. As to osteitis pubis, we have had no case in our series. I think these cases of osteitis pubis are usually due to traumatic injury of the periosteum, probably by needle pricks or rough handling in the exposure of the anterior surface of the capsule. We have not performed vasectomies in the series we reported in this paper, and we have had no instances of epididymitis. I had 1 case of epididymitis in a retropubic operation which is is not included in this series—a private case. All cases of the series reported were in ward patients in Lincoln Hospital. In a private case I performed a vasectomy, following which there was epididymitis. I think the epididymitis was probably incubating at the time I tied off the vas deferens. We have had no instances of incontinence. The catheter which was demonstrated is the same type known as the Emmett catheter, except that in the region of the bag there is a spiral coil, the purpose of which is to prevent compression of the lumen when the bag is distended. I agree with the discussants who stated their belief that the bag should be distended in the prostatic bed routinely. It is often advisable to do this; however, where there is a fair amount of bleeding, the bag should not be allowed to remain distended for long—a few hours usually suffices. It should not be distended too fully in the first place. If these principles are followed I am sure distention of the bag will not give rise to incontinence in any case. The incision in the anterior surface of the capsule of the prostate may be made in a longitudinal direction as well as transversely. This should depend on the size of the prostate and the distribution of the blood vessels. In some cases the longitudinal incision will require the severing of fewer blood vessels than a transverse incision. As a general rule, however, we employ the transverse incision. There are so many methods of removing a prostate today that it leaves one a little confused. It may be that we are in what the Roman poet Horace described as "a time of delirium" in regard to this situation. However, following that period there was the Golden Age of Caesar Augustus. It may be that after all the indications for the various methods of prostatic operations are fully discussed and all the complications considered, we will arrive at the golden age of prostatic surgery.

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# CUTANEOUS GRANULOMA FROM ACCIDENTAL CONTAMINATION WITH BERYLLIUM PHOSPHORS

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and
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During the past ten years an appreciation of the peculiar properties of beryllium led to its utilization in a variety of industrial processes and products.[1] Unfortunately, in occasional persons exposed to a beryllium-contaminated atmosphere an illness developed characterized by a distinctive clinical course and a generalized granular pattern seen on roentgen examination of the lungs.[2]

Despite the failure to produce generalized or pulmonary chronic granulomatosis[3] by exposure of experimental animals to beryllium compounds, clinical observations continue to emphasize the probable causative significance of zinc beryllium silicate in this disease.[4] Characteristic histologic changes and the presence of abnormal quantities of beryllium in the tissues and urine of such patients furnish further presumptive evidence incriminating these beryllium phosphors. Similar detailed observations in persons exposed to beryllium oxide and beryllium alloys[1a] tend to

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Mr. A. Poritsky of the Lamp Department of the General Electric Company made the spectrographic analysis of tissues and urine specimens. Dr. Sol Gross, Resident in Pathology at St. Luke's Hospital, counted the sarcoid bodies listed in table 1.

1. (*a*) Sixth Saranac Symposium: Beryllium Problem, Saranac Laboratory for the Study of Chest Diseases at Saranac Lake, N. Y., September 1947, to be published. (*b*) Wilson, S. A.: Delayed Chemical Pneumonitis or Diffuse Granulomatosis of the Lung Due to Beryllium, Radiology **50**: 770-779, 1948.

2. (*a*) Wilson.[1b] (*b*) Prendergrass, E. P., and Robert, A. G.: Some Considerations of the Roentgen Diagnosis of Silicosis and Conditions That May Simulate It, Radiology **50**: 725-745, 1948. (*c*) Pascucci, L. M.: Pulmonary Disease in Workers Exposed to Beryllium Compounds: Its Roentgen Characteristics, Radiology **50**: 23-36, 1948.

3. Saranac Symposium on the Beryllium Problem, editorial, J. A. M. A. **137**: 648 (June 12) 1948.

4. Footnote 1*a*. Hardy, H. L., and Tabershaw, I. R.: Delayed Chemical Pneumonitis Occurring in Workers Exposed to Beryllium Compounds, J. Indust. Hyg. & Toxicol. **5**: 197-211, 1948. Pascucci.[2c] Martland H. S.; Brodkin, H. S., and Martland, H. S., Jr.: Occupational Beryllium Poisoning in New Jersey, J. M. Soc. New Jersey **45**: 5-16, 1948.

single out beryllium as the principal known causative factor. Recent observations[5] that typical histologic changes follow the accidental introduction of beryllium phosphors in the skin provide additional and direct evidence of the toxic properties of beryllium. The increasing production and handling of fluorescent light bulbs, sign tubes, radio appliances and other articles of general distribution have multiplied the chances of accidental contamination of the skin and subcutaneous tissues with beryllium.

Essentially all fluorescent light bulbs manufactured in America, to the present, have contained a phosphor with varying quantities of zinc beryllium silicate (1.4 zinc, 0.6 beryllium), manganese and small amounts of finely dispersed mercury. The beryllium content of these phosphors has varied from approximately 2 to 15 per cent, expressed in terms of beryllium oxide. Since 1943 all manufacturers have used a low beryllium phosphor. In 2 of the cases of the only previous report[5] of granuloma of the skin resulting from accidental laceration by fluorescent light bulbs, the beryllium content of the phosphor was taken to be 2 per cent. In the cases of the present report the phosphor used never exceeded 4.0 per cent beryllium oxide, that is, less than 1.5 per cent, by weight, of beryllium. Previous experience has illustrated the relatively high incidence of chronic pulmonary granulomatosis following exposure[1a] to the high beryllium content phosphor, but the cutaneous granulomas following the accidental introduction of low beryllium phosphors seemingly prove that the beryllium content of the phosphor is of minor significance in the causation of these serious industrial diseases.

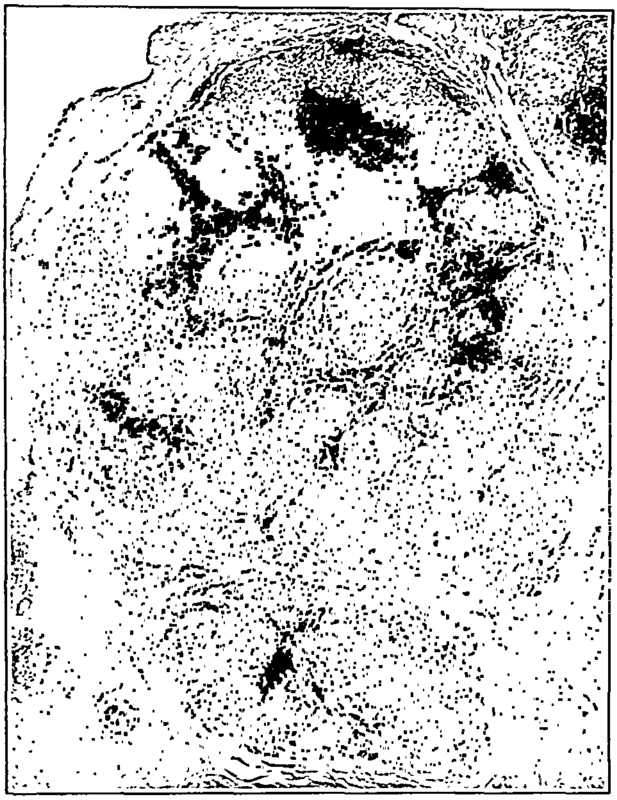

Fig. 1.—Discrete and conglomerate sarcoid bodies in fibroadipose tissue and in lymphoid tissue of suboccipital region (case 1). The majority of the granulomas show advanced hyalinization. (Hematoxylin and eosin stain, × 118).

In this paper the clinical, histologic and spectrographic data on 2 patients with indolent lesions of the skin following accidental lacerations with broken fluorescent light bulbs are presented.

## REPORT OF CASES

Case 1.—A white man, aged 36, was seen Dec. 9, 1945, with a chief complaint of exhaustion and shortness of breath on exertion, varying cyanosis, chronic cough, night sweats, diminished appetite and progressive weight loss of 20 pounds (9 Kg.). A recurring suppurative process of the skin in the suboccipital region had been present for the previous six years. The patient had been constantly exposed to beryllium phosphors during employment from August 1938 to March 1943. On June 6, 1939, the patient came in contact with a high voltage electric current and fell backward, crashing through a large crate of fluorescent lamps. He sustained extensive lacerations of the back of the head and neck and a slight compression fracture of the eighth dorsal vertebra. The lacerations were sutured and promptly healed. Subsequently a pronounced keloid formation occurred in the suboccipital region, and there was intermittent pain, swelling and tenderness in this area. Spontaneous local drainage was followed by the temporary subsidence of symptoms, but incrusted, slightly tender ulcerations persisted. These wounds had been explored on several occasions, and small foreign bodies, presumably glass, had been removed. The indolent process was an annoyance to the patient's family and to several attending physicians, but was almost disregarded by the patient. Several roentgenograms of the neck revealed small foreign bodies, presumably glass. Repeated roentgen examinations of the chest, the last one in April 1944, showed nothing of significance. In September 1945, the patient experienced shortness of breath on exertion, paroxysmal orthopnea and progressive loss of weight. During the physical examination in December, the patient was slightly dyspneic at rest, with slight cyanosis of the nail beds and moderate cyanosis of the lips, tongue and conjunctivas. A few rales were scattered throughout the lungs. There were scattered keloid formations in the suboccipital region, which were irregularly incrusted, reddened and tender. The red blood cell count was 7,800,000, hemoglobin 20.0 Gm. and the hematocrit 62 per cent. The vital capacity was 2.5 liters (expected normal 3.7 liters). The oxygen content of the arterial blood at rest was 21.5 volumes per cent and the oxygen capacity 28.0 volumes per cent.

Interest was centered on an extensive infiltrative process in the lungs, manifested on roentgen examination by fine granular nodulations throughout the pulmonary parenchyma. Numerous examinations and diagnostic procedures were done in an attempt to determine the cause of the pulmonary disability. The localized tissue change in the suboccipital region was disregarded except by a senior nurse, Miss E. A. Garvin, who suggested that if beryllium was responsible for the chronic pulmonary disease it might also be responsible for the chronic fibrosis and suppuration in the neck. The patient was advised to have a biopsy of the neck tissues. At operation, in December 1947, the tissues removed were grossly different from the usual keloid.

*Pathologic Examination.*—The specimen consisted of four pieces of subcutaneous tissue from the neck. The material was divided roughly in half. One part was reserved for spectrographic examination. Sections from the other part (fig. 1) showed a fibroadipose tissue containing large numbers of small granulomas, circular in contour and fairly well encapsulated. Some of these granulomas were in part hyalinized, and a few were completely hyalinized. The cellular granulomas consisted of monocytic elements similar to the epithelioid cells of the tubercle, but there was no caseation and there were no giant cells. A few of the granulomas, whether cellular or fibrous, were surrounded by lymphocytes. In one of the sections there were a few areas of lymphoid tissue studded with granulomas. These lymphoid aggregates might be remnants of lymph nodes.

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[5] Grier, R. S.; Nash, P., and Freiman, D. G.: Skin Lesions in Persons Exposed to Beryllium Compounds, J. Indust. Hyg. & Toxicol. 30: 228-237, 1948.

but the absence of both follicles and sinuses and the peripheral fibrosis of the granulomas made the identification difficult. Moderate quantities of beryllium were present in the half of the specimen submitted for spectrographic analysis.

The original biopsy specimen had included most of the largest keloid, but it was decided to excise the area widely in order to circumvent embedded glass and the accompanying local beryllium phosphor implant. A second operation was done in January 1948.

The second specimen consisted of a flat, roughly rectangular piece of fibroadipose tissue measuring 5 by 5.5 cm. and about 0.4 cm. in thickness. Blocks for sections were taken from the midportion of each border. The remaining tissue was divided into two parts: one, from near the scar of the first operation, was labeled "scar"; the other was labeled "adjacent." Both parts were submitted separately for spectrographic analysis. The sections consisted of fibroadipose tissue with a slight perivascular round cell infiltration. Granulomas of the type already described were found in sections from the border near the site of the first operation. No granulomas were found in the sections from the other borders of the specimen.

Spectrographic analysis of the "scar" showed the presence of moderate quantities of beryllium, while the histologically normal, "adjacent" tissue contained no beryllium.

*Other Observations.*—At the time of the second operation the patient's general condition was slightly worse. Mild to moderate cyanosis was constantly present. Transient attacks of orthopnea and increased cyanosis sometimes occurred spontaneously and invariably followed more than slight effort. Cor pulmonale had definitely developed, and the patient had recently experienced a mild, transient attack of pulmonary edema. The physical examination showed no gross change except for continuing weight loss. The blood pressure was 116 systolic and 86 diastolic, and the heart rate was 112. The second heart sound was accentuated in the pulmonic region, and a gallop rhythm was occasionally present. The urine had a specific gravity of 1.025, with albumin 0 and sugar 0. Microscopic examinations showed 6 to 8 white blood cells and occasional hyaline casts per high power field. The red blood cell count was 7,520,000, white blood cell count 7,100 and hemoglobin 18.7 Gm. The hematocrit was 56 per cent. The differential count showed 63 per cent segmented forms, 28 per cent lymphocytes, 8 per cent monocytes and 1 per cent stab forms. The serum protein was 7.4 Gm. and serum albumin 2.0 Gm. per hundred cubic centimeters. The carbon dioxide content of venous blood was 48 volumes per cent. The nonprotein nitrogen was 38 mg. and the blood sugar 90 mg. per hundred cubic centimeters. The sulfobromophthalein test of hepatic function showed 5 per cent retention after 45 minutes. There was a decided right axis deviation in the electrocardiogram with sharply peaked T waves in leads 2 and 3. Roentgenograms showed little change in the generalized granular pulmonary nodulations except for an increased confluence of the shadows in the middle third of the lung fields. The transverse cardiac diameter had increased from 14.0 to 14.7 cm., and the pulmonary artery was definitely more prominent.

The patient spent the remainder of the winter of 1948 in New Mexico, without beneficial effect on his general debility and with no improvement in his respiratory difficulties. It is of interest that extreme exhaustion and moderate dyspnea occurred at rest while the patient was crossing the Raton Pass, altitude 6,638 feet, on his return home in May 1948. In June 1948 he had a short period of chest pain, severe orthopnea, increased nonproductive cough, moderate nausea and fever. The blood pressure dropped to 76 systolic and 56 diastolic, but there was no evidence of congestive cardiac failure. Roentgen examination showed a confluent shadow in the right upper lung field suggestive of early pneumonia. Penicillin was immediately administered, and twelve hours later the patient's temperature was normal. The white blood cells decreased from 23,400 to 11,400; the extreme dyspnea lessened, and the patient was distinctly improved. At the operative site in the suboccipital region there was a thin scar. Multiple punctate incrusted lesions were still present, scattered throughout the occipital region, and they continued to exhibit evidences of indolent ulceration. These small lesions had been recognized at operation, but their removal was not considered feasible. In June 1948 the urine contained 0.0007 micrograms of beryllium per 50 cc. sample. At the time of last examination the removal of the beryllium-containing tissues had resulted in local healing, but there had been no improvement in the general physical disability or the pulmonary granulomatosis. It was the consensus of all observers that the patient was slowly deteriorating.

Case 2.—A white married woman, aged 46 years, was admitted to St. Luke's Hospital on May 19, 1948, complaining of dyspnea on exertion, cough, increased sweating, diminished appetite and weight loss of 24 pounds (11 Kg.). The patient was born on a farm and spent her youth there doing extremely hard work. She was married at 18 years. In 1921, when 19 years of age, she had an emergency appendectomy for acute appendicitis. Her fourth pregnancy, in 1927, was complicated by prolonged fever. An abscess of the left kidney was drained in the fourth postpartum month. After the sixth pregnancy, in December 1930, the patient had an acute illness, with fever, transient coma and grossly bloody urine. Good health was regained after lavage of the renal pelves. Her seventh and eighth (last) pregnancies were normal.

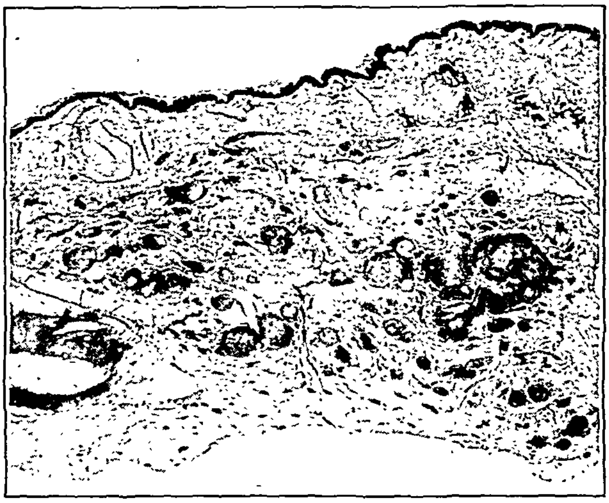

Fig. 2.—Low power view of a section from slice B of the scar in the forearm (case 2) showing the large number of sarcoid bodies in dense fibrous tissue. (For the size and number of sarcoids in this section, see text and table 1.) (Hematoxylin and eosin stain, × 6.9.)

Her work record included housekeeping duties with two short periods of employment in a dress manufacturing establishment. There had been no known exposure to industrial toxic hazards. When she was employed in a beryllium industry, in February 1942, she considered herself in good health and able to work hard. Her weight at this time was 175 pounds (79 Kg.), and her blood pressure was 188 systolic and 100 diastolic. She had no symptoms suggestive of vascular or myocardial disease, but arterial hypertension was consistently present and treated by various medicaments. A routine roentgenogram of the chest (14 by 17 film) in September 1947 was essentially normal.

Her present illness began about October 1947. The initial dyspnea on exertion and nonproductive cough were attributed to an acute infection of the upper part of the respiratory tract. A similar diagnosis was made in January 1948, during a temporary exacerbation of the aforementioned symptoms with associated fever. She was able to walk slowly without distress, but her exercise tolerance gradually decreased, and a short fast walk or climbing one flight of stairs caused moderate exhaustion, dyspnea and paroxysms of coughing. She had used lipstick for several months in order to conceal blueness of the lips. Despite these difficulties the patient did not consider herself incapacitated. Medical interest in her condition was stimulated by generalized granular shadows throughout the lung fields seen in a routine roentgenogram of the chest taken on April 30.

In the subsequent examination, a history was secured that the right forearm was severely lacerated by a broken fluorescent light bulb in August 1946. The wound was sutured and healed promptly. In January 1948 there was swelling, pain and tenderness about this scar. No foreign bodies were demonstrated in roentgen examination. The scar became hypertrophic, reddened, painful and tender. The symptoms were relieved after self-induced drainage of an indurated area. Recurrence of local signs and symptoms were intermittently present and relieved by spontaneous drainage. There was no pain about the scar on the patient's admission to the hospital. The respiratory rate and temperature were normal. There was slight blueness of the lips and nail beds, but no clubbing of the fingers and toes. The blood pressure was 210 systolic and 138 diastolic. Minimal evidence of arterial disease was present in the retinal arteries, and there was slight distention of the retinal veins. The heart sounds were normal, and the rhythm was regular. The lungs showed no abnormalities. There were two surgical scars of the abdominal wall and one surgical scar in the left lumbar region. Lax abdominal walls and diffuse abdominal tenderness were present without other abnormalities. Breath holding varied from 28 to 33 seconds. The vital capacity was 1.6 liters (expected normal 3.4 liters). The reaction to an intradermal tuberculin test, 1 : 10,000, was negative. The urine was normal except for a beryllium content of 0.001 micrograms per 50 cc. sample. The red blood cell count was 6,280,000, hemoglobin 16.9 Gm. and white blood cell count 6,000. The differential count showed 61 per cent segmented forms, 36 per cent lymphocytes and 3 per cent monocytes. The corrected sedimentation rate was 19 mm. per hour. The reaction of the blood to the Kline test was negative. The blood nonprotein nitrogen was 36 mg. and blood sugar 104 mg. per hundred cubic centimeters. Smear of the sputum was negative for tubercle bacilli. The urea clearance test in three consecutive hours was 130, 133 and 115 per cent of normal. The specific gravity of the urine varied from 1.018 to 1.024. The serum protein was 6.9 Gm. and the serum albumin 3.2 Gm. per hundred cubic centimeters. The sulfobromophthalein test of hepatic function showed retention of 8.5 per cent in 45 minutes. The result of the cephalin flocculation test was normal. The electrocardiogram showed a left axis deviation, a normal sinus rhythm, with a rate of 94, and a P-R interval of 0.14 seconds. Roentgen examination of the chest revealed fine granular stippling throughout the lung fields. There was calcification of the right bronchopulmonary lymph nodes and an area of calcific density in the right lower lung field. The heart was normal in size and configuration.

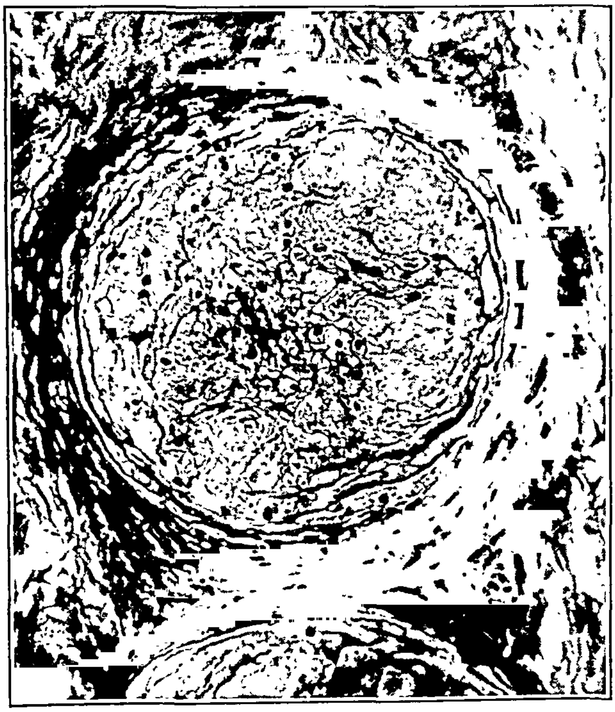

Fig. 3.—Photomicrograph of simple sarcoid in the scar of the forearm (case 2). Azocarmine stain. Tri X plate, and green filter. This figure and figures 4 and 5 show the dense peripheral fibrosis of the sarcoid and the progressive fibrosis and hyalinization of the central part (X 260).

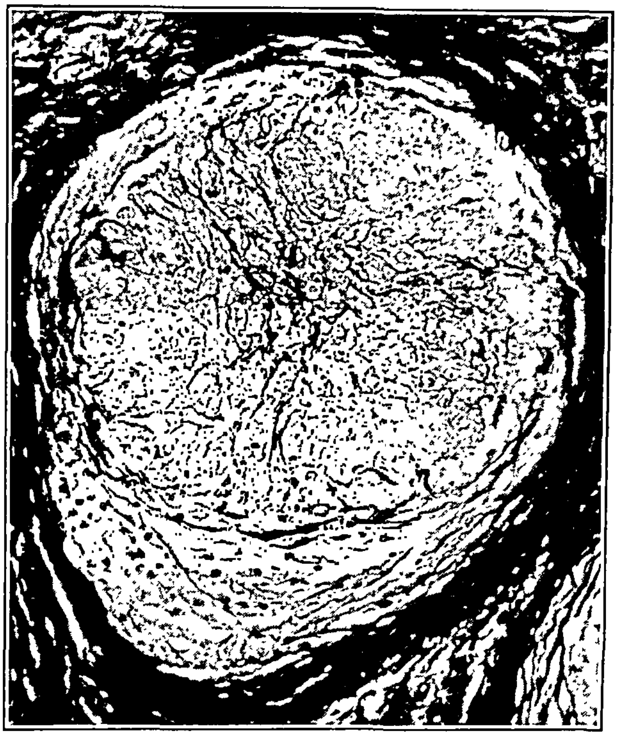

Fig. 4.—Photomicrograph of simple sarcoid in the scar of the forearm (case 2) (X 260).

Table 1.—*Sarcoid Bodies in Case 2*

| Slice | Area of Section, Sq. Cm. | Number of Sarcoid Bodies in Section | Number of Sarcoid Bodies per Sq. Cm. of Section |
|---|---|---|---|
| B | 4.215 | 118 | 28.0 |
| D | 5.743 | 210 | 36.6 |
| F | 3.052 | 120 | 39.3 |
| H | 2.313 | 78 | 33.7 |
| J | 2.335 | 37 | 15.8 |
| L | 1.323 | 6 | 4.5 |

The scar tissue of the skin over the right elbow was widely excised in May 1948. A small piece of skin, representing a recent scar of the right leg, was removed for control purposes.

*Pathologic Examination.*—The specimen consisted of (1) a scar from the right arm and (2) a scar from the right shin. The scar from the right arm was crescent shaped and measured 5 by 3 cm. and 1 cm. in thickness. The specimen was divided in consecutive slices labeled from A to L. The slices A, C, E, G, I and K were used for spectrographic analysis. Slices B, D, F, J, H and L were fixed in Bouin's fluid for microscopic sections. The specimen from the right shin was a flattened piece of skin with an oval contour, 1.2 cm. in length, 0.8 cm. in width and 0.5 cm. in thickness. On the skin surface of this piece there was an elongated depressed abrasion. The piece was sectioned along the abrasion. Half the material was used for spectrographic analysis. The other half was fixed in Bouin's solution, embedded in paraffin and sectioned.

All the sections from the scar of the right arm showed granulomas of sarcoid type (fig. 2). These bodies were either simple or conglomerate and varied considerably in size and number. The large ones were surrounded by dense collagenous fibers arranged in concentric layers. In many of the large sarcoids there were central pale areas consisting of coarse hyaline fibers, giving an appearance different from that of caseous tuberculosis (figs. 3, 4 and 5). The main cellular elements of the sarcoids resembled the epithelioid cells of tubercles. Besides these cells there were lymphocytes, especially in the periphery of the smaller sarcoids, and multinucleated giant cells of Langhans type (fig. 6). In the small sarcoids the contour of the cells could be outlined with ease. In the larger sarcoids the individual cells tended to form a syncytium and the cell bodies were difficult to outline. Toward the periphery of the sarcoids there were spindle cells with polar fibers oriented along the circumference. In some of the sarcoids there were angular slits containing small crystals. In one giant cell a dense club-shaped foreign body was present. No asteroid bodies were seen in any of the giant cells. With the azocarmine stain, practically all the sarcoids showed stainable fibers. These fibers were few in the smaller sarcoids, but became abundant in the larger sarcoids. The central pale areas mentioned before could be shown, by means of this stain, to consist of large numbers of collagenous fibers with few nuclei between. In slice D several sarcoids showed almost total fibrosis (fig. 5). In slice H a few conglomerate sarcoids lay immediately in contact with the epidermis. In this area there was flattening of the interpapillary pegs, reduction in the amount of melanin and of keratohyaline granules and a light staining of the malpighian layer. There was, however, no hyperkeratosis, no acanthosis and no ulceration. The number of sarcoid bodies in the slices are shown in table 1. The areas of the sections were then measured by projection and weighing. The number of sarcoids per square centimeter of section was then calculated with the results shown in table 1. The largest conglomerate sarcoid was found in slice D, 2.53 by 1.86 mm. The second largest was found in slice F, 1.68 by 0.93 mm. and the third largest in slice B, 1.53 by 0.86 mm. The largest number of large sarcoids was found in slice F. Of the simple circular sarcoids the largest, 0.86 mm., was found in slice B. The scar from the shin showed no granulomatous inflammation and no sarcoids.

TABLE 2.—*Results of Analysis of Tissue (Case 2)*

| Slice | Weight, Mg. | Beryllium, Micrograms | Beryllium Concentration, Micrograms/Gm. of Tissue |
|---|---|---|---|
| A | 193 | 0.005 | $25.9 \times 10^{-3}$ |
| C | 971 | 0.077 | $79.4 \times 10^{-3}$ |
| E | 224 | 0.013 | $58.1 \times 10^{-3}$ |
| G | 337 | 0.011 | $32.7 \times 10^{-3}$ |
| I | 241 | 0.003 | $12.4 \times 10^{-3}$ |
| K | 142 | 0.0003 | $2.1 \times 10^{-3}$ |

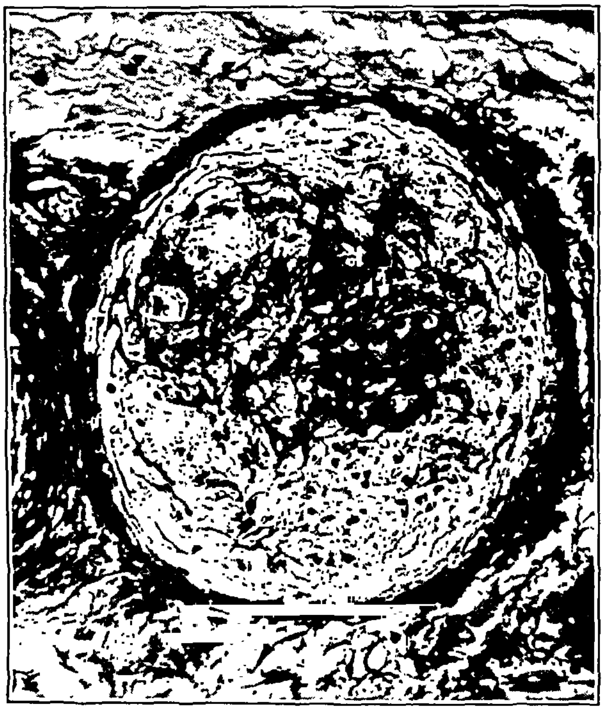

Fig. 5 (case 2).—Photomicrograph of simple sarcoid in the scar of the forearm (× 260).

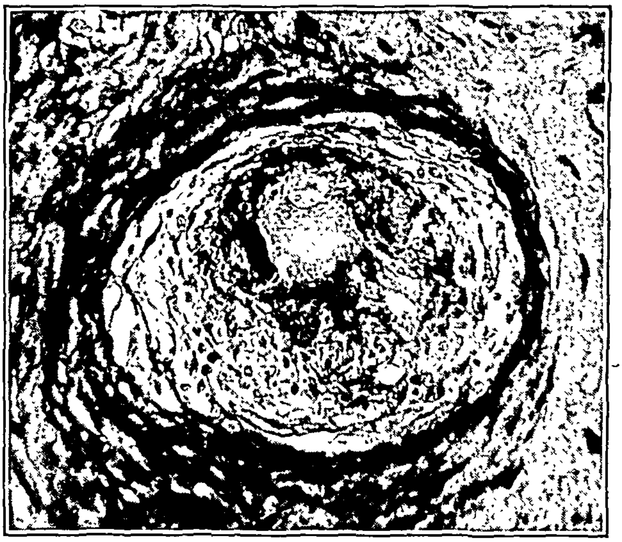

Fig. 6.—Photomicrograph of simple sarcoid in the scar of the forearm (case 2). Azocarmine stain. Tri X plate. Multinucleated giant cell surrounded by dense and hyalinized collagenous fibers (× 260).

The results of the spectrographic analysis of the tissue from the forearm is shown in table 2. There was no beryllium found in the skin from the right leg.

A report on this patient in September 1948 stated that her general condition was slightly improved, but there had been a small local recurrence of subcutaneous induration near the original scar on the right forearm.

## COMMENT

It is of interest that a peculiar granulomatous cutaneous lesion has now been reported as occurring in 5 patients who have had a zinc beryllium silicate compound accidentally introduced in and under the skin by lacerations sustained with fluorescent light bulbs. The histologic changes in the cutaneous lesions in our cases have been compared with postmortem material from chronic beryllium granuloma of lung which was furnished us by Dr. A. W. Vorwald of Trudeau Laboratories and Dr. F. R. Dutra of Kettering Laboratories. It has been the consensus of all observers that the histologic features of these lesions are similar.

We believe that the generalized granulomatous disease in our patients was caused by the beryllium-contaminated air to which they had been exposed for four and a half and six years, respectively. The surgical removal of the major beryllium deposits in the skin and subcutaneous tissues had no demonstrable effect on the pulmonary lesions. Three of the patients previously reported with local ulceration of the skin did not have the pulmonary form of the disease, and we have knowledge of 2 additional similar patients. Generalized pulmonary granulomatosis has not been reported to follow the accidental introduction of beryllium into the skin or subcutaneous tissues.

Significant quantities of beryllium have been found by spectrographic methods in the cutaneous tissues of our patients while control determinations of apparently uninvolved tissues in these patients have shown no beryllium. The rough parallelism between the quantity of beryllium present and the degree of sarcoid-like change in the tissues may be fortuitous. However, the count was not made on serial sections, and besides there is no way to estimate the size of the sarcoid bodies when these lesions are conglomerate. The observation that beryllium may persist locally in the tissues for a period of eight and a half years despite repeated ulceration and suppuration and despite possible removal by lymphatic channels (case 1) provides a further significant common feature between local beryllium disease in the skin and chronic beryllium granulomatous change in the lungs. Although chronic pulmonary granulomatous disease has not been produced experimentally, we believe that the study of these instances of cutaneous involvement lends additional support to the clinical evidence that beryllium is at least a major factor in the causation of a sarcoid-like disease which may cause extensive granulomatous change in several structures of the body.

Irrespective of the absolute etiologic basis for the chronic granulomatous change, it seems obvious that local lacerations caused by fluorescent bulbs coated with zinc beryllium silicate should be widely excised before surgical closure. Cure of the local lesion can be accomplished only if all contaminated tissue is removed.

### CONCLUSIONS

1. Chronic persistent granulomatous inflammation of the skin with ulceration may follow accidental lacerations by the present type of fluorescent light bulbs (glass coated with zinc beryllium silicate).
2. The histologic appearance of these skin granulomas is similar to that found in the lung in fatal cases of pulmonary granulomatosis occurring in beryllium workers.
3. Prevention of the cutaneous lesions can be accomplished only by wide excision preceding initial closure.

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**The Number of Rats in Baltimore.**—A method of estimating populations of brown rats (Rattus norvegicus) by means of signs permits an estimate of the number of rats in Baltimore, Md. In September, 1947, the number of rats in a random sample of 359 blocks in the residential part of the city was estimated and the number of rats in the city calculated on the basis of rats per dwelling unit. This computation gives 139,855 rats, with a range (± 2 × standard error) of 119,000 to 158,000. On the basis of other sources of information an estimate of 26,000 rats in the commercial areas was made. A map of rat population according to census tracts agrees closely with the distribution of buildings in need of major repairs.—David E. Davis and W. T. Fales, The Distribution of Rats in Baltimore, Maryland, *The American Journal of Hygiene,* May 1949.

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# DERMATITIS VENENATA FROM ORGANOMERCURIAL COMPOUNDS

## With a Comparison of Their Pharmacologic Action on Normal and Injured Skin

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and
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In 1944, a report[1] was submitted on overtreatment dermatitis, which recommended that tinctures, salves and lotions containing a mercury compound should bear a "warning" on the label of the presence of a sensitizer. This article pointed out that a concise chemical and pharmacologic evaluation of drugs used on the skin might lead to a decline of the incidence of overtreatment dermatitis. A report[2] submitted in 1945, on overtreatment dermatitis of the feet, urged the Council on Pharmacy and Chemistry to "clean house" in the field of cutaneous drugs as it did with orally and parenterally administered drugs; tear apart the topical concoctions and define each cutaneous chemical in terms of dosage, indications and contraindications, and declare each therapeutic agent according to its chemical and pharmacologic properties. Again, it was recommended that all mercurials should carry a "warning" on the label of the presence of a sensitizer. Another report,[3] on overtreatment dermatitis in dermatitis venenata due to plants, stated, "The chemist and bacteriologist have supplied reams of data on the test tube performances of the myriads of antiseptics, but their toxicity—their incubation period on normal and abnormal skin—has been overlooked, often wrongly interpreted as infection. As a result, all the mercurial antiseptics at least need reconsideration."

On Jan. 3, 1948, the Council set forth that the field of usefulness of organic mercurials should be explored, proved and defined.[4] Evidently, the most important part of this challenge was the pharmacologic actions of the organomercurials on the skin, because it is this organ of the body that bears the brunt of the usefulness of these antiseptics. Accompanying the Council's statement was a report[5] on the bacteriostatic and bactericidal actions of some mercurial compounds on hemolytic streptococci. A surprising revelation was the bacteriostasis of hemolytic streptococci by these chemicals instead of their being bactericidal.

The lack of interest in cutaneous pharmacology was demonstrated by the fact that the authors[5] took up five pages in THE JOURNAL discussing bacteriologic data, but the actions of the mercurials on the skin were dismissed in two sentences. Reams of bacteriologic experiments do not prevent dermatitis venenata. Aroused by the challenge of the Council, Brewer[6] and Powell[7] presented bacteriologic observations which took up another five and one-half pages in THE JOURNAL. Their experiments defended the usefulness of mercurial antiseptics. These authors did not even mention the skin and declined to discuss the numerous reports on sensitization dermatitis from organomercurial compounds. Scientific argumentation, too, does not prevent dermatitis venenata. Interestingly, the color, red, really signifies danger.

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[1] Gaul, L. E.: Overtreatment Dermatitis, J. A. M. A. **127:** 439 (Feb. 24) 1945.

[2] Underwood, G. B.; Gaul, L. E.; Collins, E., and Mosby, M.: *Overtreatment Dermatitis of the Feet,* J. A. M. A. **130:** 249 (Feb. 2) 1946.

[3] Underwood, G. B., and Gaul, L. E.: Overtreatment Dermatitis Venenata Due to Plants, J. A. M. A. **138:** 570 (Oct. 23) 1948.

[4] Organomercurial Compounds, report of the Council on Pharmacy and Chemistry, J. A. M. A. **136:** 36 (Jan. 3) 1948.

[5] Morton, H. E.; North, L. L., and Engley, F. B.: Actions of Mercurial Compounds, J. A. M. A. **136:** 37 (Jan. 3) 1948.

[6] Brewer, J. H.: Reduction of Infectivity of Bacteria, J. A. M. A. **137:** 858 (July 3) 1948.

[7] Powell, H. M.: Antibacterial Action of Merthiolate, J. A. M. A. **137:** 862 (July 3) 1948.

Physicians reading these reports and counter reports would be left with the impression that the mercurial antiseptics were completely safe for use on the skin. Preventing and treating cutaneous infections is the reason for the popularity of these compounds. Advertisements,[8] a forceful educational channel, inform the public that "'it is dangerous to neglect wounds, however small; even scratches and small cuts may cause serious infection if they are not properly treated,' 'a first aid care for all minor wounds,' 'can be applied safely to small wounds.'" Patients and especially parents are disturbed by patch test reactions from their favorite household antiseptic. To them it seems preposterous that anything as important as an antiseptic would cause their skin to break out. There is no "warning" on these little bottles of red medicine. Advertisements inform physicians that organomercurials "inhibit and destroy organisms as they are released from sebaceous and sweat glands during the surgical procedure." (No proof is cited that cutaneous glands harbor organisms that are pathogenic.) Such statements leave an impression that the skin is a bacteriologic menace to the body. Failure to mention any toxicity boldly implies that the antiseptic is nontoxic. Physicians abhor producing in their patients dermatitis venenata from antiseptics. Where is the "warning" in this advertising that these compounds are powerful sensitizers?

### PHARMACOLOGIC ACTION OF ORGANOMERCURIALS ON NORMAL SKIN

The organomercurials are preferred for the preoperative preparation of the skin. The incidence of irritation has remained low enough to prevent limitation of their use in this field. No doubt, some cases of wound disruption, wound infection, stitch abscesses and delayed healing are unrecognized organomercurial dermatitis (fig. 1). The signs of the latter are indistinguishable from alleged secondary infections. The continued popularity of the organomercurials among surgeons is explainable on the basis that for the most part they are applied to essentially normal skin. Cutaneous chemicals outside the protective barriers of the skin (the *p*H, lipid coating, horny mantle) are pharmacologically in a different category than when they contact living skin. A normal skin, its protective barriers intact, can withstand repeated applications with mercurial antiseptics before it succumbs to sensitization dermatitis. To illustrate the importance of these barriers, patch tests with three to six different mercurial antiseptics were made postoperatively in 82 cases. The patients had been exposed to merthiolate® (sodium ethylmercurithiosalicylate) at least once and some of them two or three times. They never had had any skin trouble, and the surgical incisions had healed promptly. Not a single positive reaction to a patch test was recorded.[3] A conclusion that will find few dissenters is to the effect that mercurials on normal skin are unlikely to induce dermatitis venenata. This conclusion, of course, implies that the skin has not been previously sensitized to them. The present concept of the cutaneous pharmacologic aspects of the organomercurials obviously has been taken from the actions on normal skin.

### PHARMACOLOGIC ACTION OF ORGANOMERCURIALS ON INJURED SKIN

Disruption of the cutaneous protective barriers is the first prerequisite for these chemicals to induce acquired sensitization. The basic action of these antiseptics on injured skin was obtained by a review of current reports [10] on 20 cases. Eleven different authors observed similar actions.

1. *Organomercurials Applied for Antisepsis.*—Of the 20 cases, merthiolate® was causative in 14, mercurochrome® (disodium salt of 2, 7-dibrom-4-hydroxymercurifluorescein, merbromin, N.F.) in 3 and metaphen® (anhydride of 4-nitro-3 hydroxymercuriorthocresol, nitromersol, N.F.) in 3. Merthiolate® had the highest exposure ratio; thus it produces the greatest incidence of dermatitis.

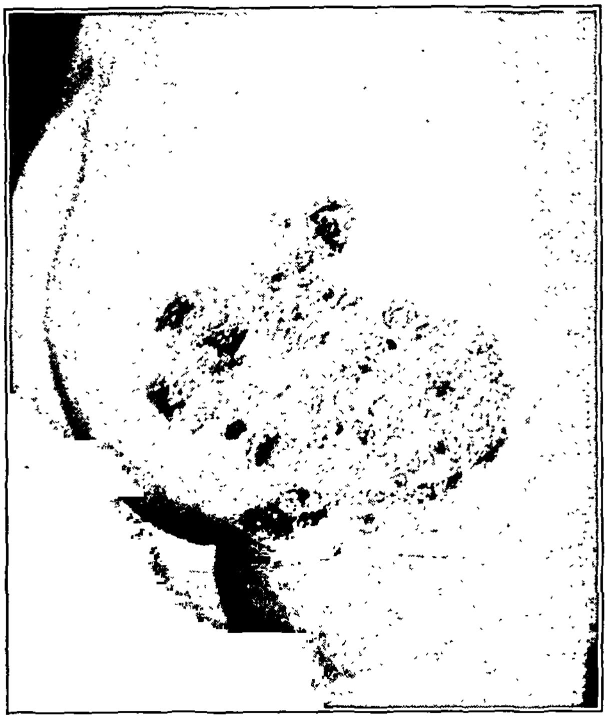

Fig. 1.—Wound disruption and ecthymatous dermatitis from merthiolate® (C. G., a 36 year old white woman). Merthiolate® was used to prepare the skin for a cesarean section in 1942 and for a second cesarean in 1944. The incision healed slowly with numerous pustules along the margin, and five stitch abscesses developed. In 1945, a nevus was excised from the right buttocks. The skin was prepared with *merthiolate.®* Healing progressed satisfactorily for one week; then the incision opened. Merthiolate® was applied to the gaping wound and surrounding skin. Within a few days the wound drained profusely, and the entire area of skin painted with the preparation became a deep-seated pustular dermatitis. It took six weeks for the wound and the dermatitis to heal.

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[8] Advertisements, Hygeia, September 1948.

[9] Omitted in proof.

[10] (*a*) Gaul.[1] (*b*) Hollander, L.: Contact Dermatitis Produced by Tincture of Merthiolate, Arch. Dermat. & Syph. **50:** 123 (Aug.) 1944. (*c*) *Lipson, L.: Sensitivity to Tincture of Merthiolate, New England* J. Med. **234:** 441 (March 28) 1946. (*d*) Ellis, F. A., and Robinson, H. M.: Cutaneous Sensitivity to Merthiolate and Other Mercurial Compound, Arch. Dermat. & Syph. **46:** 425 (Sept.) 1942; (*e*) Possible Danger in Use of Merthiolate Ophthalmic Ointment, Arch. Ophth **30:** 265 (Aug.) 1943. (*f*) Huff, D. H.: Contact Dermatitis from Sensitivity to Merthiolate, Balyeat Clin. Proc. **17:** 14, 1947. (*g*) Pascher, F., and Silverberg, M. G.: Hypersensitivity to Mercurochrome Arch. Dermat. & Syph. **27:** 408 (March) 1933. (*h*) Belote, G. H., and Marshall, D.: Metaphen Dermatitis, Arch. Dermat. & Syph. **34:** 58 (March) 1935. (*i*) Ellis, F. A.: The Sensitizing Factor in Merthiolate, J. Allergy **18:** 212 (May) 1947. (*j*) Cherry, C. B.: Dermatitis Caused by Tincture of Merthiolate, Arch. Dermat. & Syph. **44:** 1105 (Dec.) 1941. (*k*) Cogswell, H. D., and Shoun, A.: Reaction Following the Use of Tr. Merthiolate, Arizona Med. **5:** 42 (Nov.) 1948. (*l*) Templeton, H. J.; Lunsford, C. J., and Allington, H. V.: Autosensitization Dermatitis, Arch. Dermat. & Syph. **59:** 68 (Jan.) 1949.

2. *Cases*—Age, sex or color were not factors in the production of dermatitis by mercurial antiseptics. Our series of cases showed a proportionate incidence among Negroes. No personal or familial predisposition was encountered. The organomercurials then are classed as chemicals, readily inducing acquired sensitization dermatitis.

3. *Type of Cutaneous Injury.*—The kind and degree of trauma were relatively unimportant. the crucial factor being disruption of the protective barriers of the skin. The types of cutaneous injury most commonly encountered were trauma due to physical agents, burns and so on; mechanical agents, abrasions, lacerations, scratches and surgery; chemical agents, dermatitis venenata from any cause, and infections. A specific infection, like chickenpox, disrupts the skin barriers, and the likelihood of a superimposed dermatitis from application of a mercurial is as great as from application of an antiseptic to an incised wound. In a cutaneous infection which has become severer or has spread, an inquiry into the antiseptics that have been applied might reveal the cause. The onset of dermatitis following an injury to the skin is an everyday occurrence. Checking the chemical applied may reveal the cause without necessitating long discussions about the rarity of the morphologic changes. Antiseptics and germicides surpass all other topical chemicals in producing overtreatment dermatitis.[11] Figure 2 illustrates a typical case.

4. *Location.*—The areas of skin most subject to trivial trauma or alleged fungus infections of the feet, with or without "ids" on the hands, are the commonest sites for primary sensitization dermatitis from mercurial antiseptics. An illustrative case is shown in figure 3.

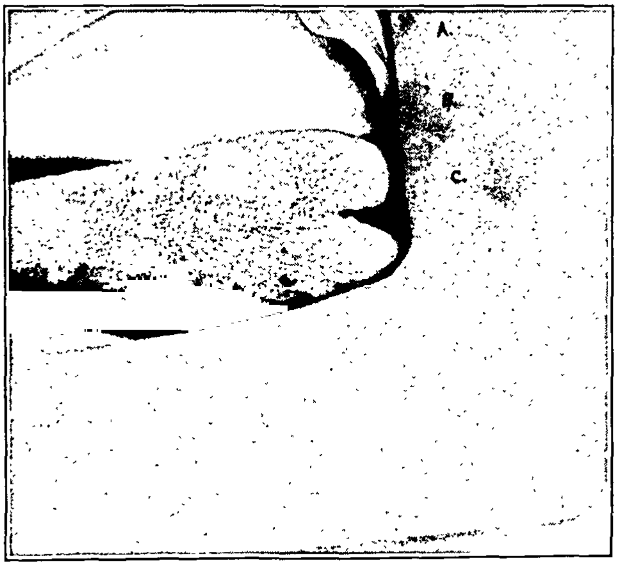

Fig. 2.—Dermatitis due to merthiolate® of three weeks' duration in N. D., a 16 year old white school girl. The dorsal lateral surface of the right hand was scratched, and *merthiolate® was applied to the injured* area to prevent infection. In a few days, an eruption appeared which a physician considered to be a secondary infection, and the area was again painted with merthiolate.® The eruption promptly spread. Positive reactions to patch tests are shown on the left arm to (*A*) aqueous merthiolate® (*B*) mercuric chloride and (*C*) *tincture of merthiolate.®*

5. *Sources of First Application.*—Thirteen patients were exposed by physicians or personnel supervised by them. This is proof that physicians have not been informed about the sensitizing potentialities of these compounds. Seven patients were exposed by self application—proof of the effectiveness of lay educational programs on what to do for minor traumas.

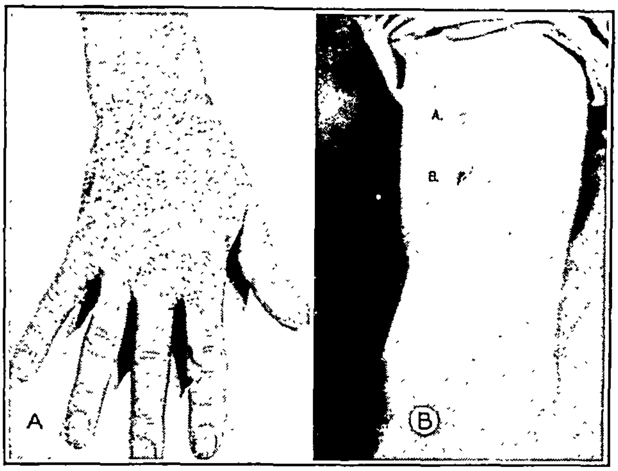

Fig. 3.—*A*, right hand of W. T., a white male meat cutter, aged 46. For six years, he had had a recurrent vesicular eczematization of the dorsal aspect of the hand. There had been remissions for as long as one year. In January 1946 an acute recurrence developed. The reaction to a patch test with mercresin,® the antiseptic used in the first aid room at his place of employment, was negative. It was then ascertained that six years previously merthiolate® had been in use in the first aid room and this antiseptic had been applied to a laceration on the right index *finger. The cause of the recurrence was traced to the antiseptic used in* the home, merthiolate.® Reactions to patch tests with ammoniated mercury 5 per cent, metaphen,® and mercuric chloride 5 per cent were negative. Reaction to patch tests with tincture and aqueous merthiolate® were positive (fig. 3*B*). This case is an example of the remarkable specificity of the organomercurial sensitizations. *B*, Positive patch test reactions to (*A*) tincture merthiolate® and (*B*) aqueous merthiolate.®

6. *Duration of Applications.*—This is the second prerequisite for mercurial dermatitis. The time interval in the 20 cases varied from one day to several weeks. For a given injury, as the duration of applications increased, the likelihood of sensitization increases proportionately. The organomercurials are sufficiently potent sensitizers so that, with the first and second prerequisites met, dermatitis can be produced in almost anyone.

7. *Incubation Period.*—The seemingly unpredictable periods of exposures before onset of sensitization introduces the third prerequisite; the chemical structure of the compound applied. The formula of the organomercurials classes them as typical sensitizers. Once they have produced cutaneous sensitization, reactions to patch tests are prone to occur in progressively higher dilutions. Reactions have occurred to dilutions of 1 : 1,000,000. Ellis[101] commented on the possible dangers from injection of serums and plasmas containing merthiolate.® These dangers are more real than generally believed. One brand of allergens for intradermal tests contains merthiolate.® A high dilution of an organomercurial in a skin remedy does not lessen the likelihood of a sensitization dermatitis. A patient who requires five days or more for dermatitis to appear is doubtless being sensitized to the particular antiseptic. A patient who requires two to five days is probably being sensitized, but these short reaction periods also suggest a possible preexisting, subthreshold sensitization. Patients in whom dermatitis develops in less than twenty-four or forty-eight hours have been previously sensitized.

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11. Gaul.[1] Underwood, Gaul, Collins and Mosby.[2] Underwood and Gaul.[3]

*8. Signs of Dermatitis.*—A common observation has been the gradual development of inflammation in an injury following the application of a mercurial. Perhaps a better designation would be delayed healing. Reapplying mercurials at the site of these signs apparently speeds up the sensitization process. The appearance of pustules in or around the wound is a cardinal sign of sensitization, and a positive reaction to a patch test is probable. Another equally common observation is that the initial injury practically heals and then suddenly disrupts with profuse drainage. Around the injury a vesicular eczematization appears, which may rapidly spread. Application of a mercurial to this reaction frequently produces generalized dermatitis.

A. Primary Sensitization Signs at Site of Injury: Eczematization which may be dry, fissured, papular, vesicular, pustular, bullous or hemorrhagic is the classic sign of dermatitis due to antiseptics. While the signs are characteristically nonspecific, the sensitizing chemical is highly specific; that is, a simple chemical like merthiolate,® in sensitizing the skin, produces a remarkable variability in the morphologic aspects of the eruption. A pustular eruption is common, which explains why the disease in these patients is incorrectly diagnosed as infection, secondary infection, infectious eczematoid dermatitis or fungus infection. A diagnosis of fungus infection has become so popular among laymen that the diagnosis "eczema" is becoming obsolete. Physicians, too, seldom use this term. A diagnosis of an "infection" has tended to replace the term "eczema." The latter suggests zinc oxide ointment for treatment, but infection suggests an antiseptic, in the wake of which has arisen the specter of overtreatment dermatitis. Howell,[12], too, pointed out that sensitization dermatitis from topical medicaments following the treatment of some trivial eruption, as pruritus, miliaria, a superficial burn, an insect bite, poison ivy, sunburn or athlete's foot, is a common and everyday occurrence. When contact dermatitis occurs during the course of topical chemotherapy, the common mistaken interpretation is that infection, such as erysipelas or cellulitis has occurred or that the patient has contracted poison ivy dermatitis.

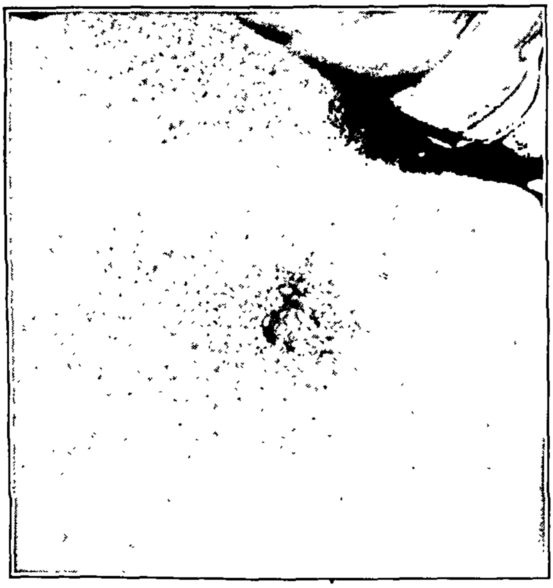

Fig. 4.—J. G., a 54 year old white man, sustained a burn on the left leg. This was painted with merthiolate®; in about ten days the wound was almost healed. Overnight, vesicular eczematization developed in the burned area. Merthiolate® was applied to this eruption, and within three days a generalized vesicular dermatitis appeared. One year later, the right thumb was lacerated and merthiolate® was applied to prevent infection. Within twenty-four hours the thumb became the site of a pustular eczematization, and four days later, lymphangitis with adenopathy developed associated with fever and leukocytosis. After the thumb had healed,, a patch test with tincture of merthiolate® on the right arm produced a bullous reaction in less than twelve hours. The reaction to a patch test with tincture of merthiolate® is shown on the left arm sixteen months later. There was no diminution in the intensity of the reaction to the patch test. From all available evidence, the duration of organomercurial sensitization may be months, years or even a lifetime.

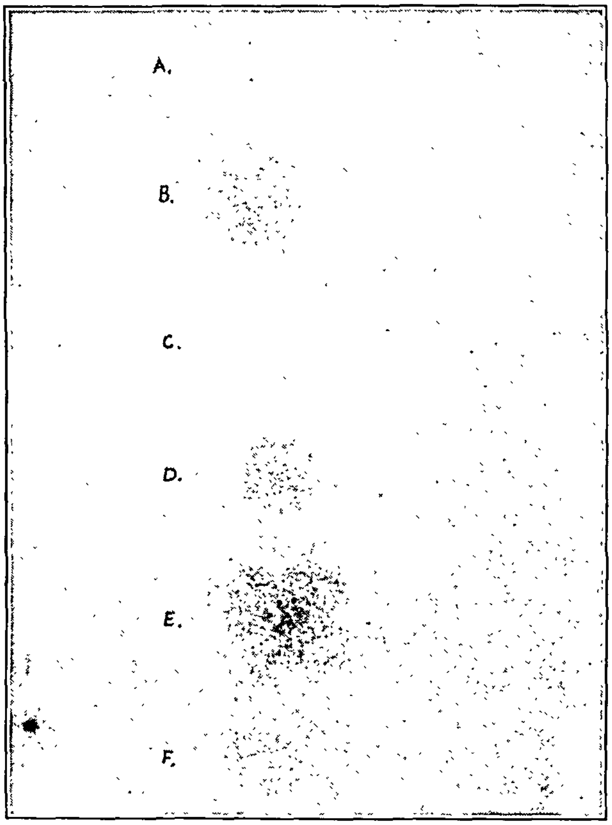

Fig. 5.—W. F., a 40 year old white man, had had a static ulcer on the right leg for eight years. At the initial visit, the ulcer was deeply stained with a red antiseptic. Patch tests were performed with (*A*) aqueous merthiolate,® (*B*) ammoniated mercury, (*C*) thiosalicylic acid, (*D*) mercresin,® (*E*) metaphen® and (*F*) mercuric chloride. All the reactions were positive except to thiosalicylic acid. The history disclosed that, to the patient's knowledge, mercresin® or metaphen® had never been applied to the ulcer. We cannot explain these groupings of reactions. Perhaps they are a mercury ion effect. The history did disclose that mercuric chloride, merthiolate® and ammoniated mercury had been used in treating the ulcer. This patient was not seen for the leg condition, but for a generalized dermatitis which appeared after application of merthiolate® to the ulcer.

B. Secondary or Generalized Signs Resulting from Primary Sensitization: In 11 out of 20 cases there developed a generalized dermatitis, the signs of which tended to reproduce the signs at the primary site of sensitization. The factor which apparently conditions a generalizing of the dermatitis is the application of the mercurial to the primary sensitization site.

*9. Patch Test Reactions.*—All reactions to patch tests with the mercurials indicate a generalized sensitization. Reactions that appear in less than twenty-four hours, and especially those associated with flaring, usually indicate a high degree of sensitization. These reactions are common in patients with generalized eruptions or patients who have had a generalized eruption from antiseptics in the past. Figure 4 illustrates a typical case.

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[12] Howell, J. B.: Contact Dermatitis, Arch Dermat. & Syph. **53**: 265 (March) 1946.

*10. Exacerbation Time on Reexposure.*—If a patient experiences dermatitis in less than twenty-four hours on exposing an injured or normal skin to an organomercurial, it can be assumed that a preexisting sensitization was present. Obviously, the reexposure mercurial must be the same mercurial that induced the sensitization. Our investigations do not support multiple sensitivities to the organomercurials, but do support a remarkable specificity. A typical case is shown in figure 5.

*11. Complications.*—Proof of the sensitizing potency of the organomercurials is the fact that 11 patients out of 20 experienced generalized dermatitis. Five patients presented regional adenopathy, which adds significance to the reports [13] on the toxicity of mercurial antiseptics for embryonic tissue cells and leukocytes. In our series of cases, lymphangitis with adenopathy was frequently encountered as a complication of the primary sensitization signs at the site of injury. Do these antiseptics applied to injured skin destroy the natural defense mechanisms, thereby paving the way for bacterial or virus invasion; or is this complication a manifestation of sensitization? We suspect that merthiolate® has a highly selective toxicity for collagen and elastic tissue fibers.

*12. Remarks.*—Five of the 20 patients required hospitalization. No wonder the Council closed its report [4] on the organomercurials with this admonition, "It is a field in which wishful thinking is dangerous."

### INCIDENCE OF DERMATITIS VENENATA FROM APPLICATION OF ORGANOMERCURIALS TO DISEASED OR INJURED SKIN

Past treatment patch tests [1] performed on 400 dermatologic patients disclosed that 40 per cent (160 patients) experienced positive reactions to one or more of the remedies they had applied. The offender in 56 cases was one of the organomercurials, with merthiolate® being responsible for 90 per cent of the positive reactions.[2] Hopkins and his co-workers [14] treated 125 patients with dermatophytosis with the organomercurials and noted a 21 per cent incidence of irritation. Another series of 78 patients were treated with tincture of merthiolate® containing salicylic acid, 3 to 5 per cent. Now the incidence of irritation was 23 per cent. These reports appeared in October 1946, but in June 1944 these authors [15] in a discussion of treatment and prophylaxis of dermatophytosis advocated that every soldier showing evidence of dermatophytosis should be given preparations for self treatment, one of which was the merthiolate® salicylic acid combination. Observation of feet receiving this treatment prompted us to say, "The human foot has become the target of unbelievable chemical abuse." Howell [12] in a single year observed 25 cases of eczematous contact dermatitis from the use of topical mercurials. In 2 cases the condition was due to merthiolate® and in 1 case to mercurochrome.® During 1945, Ellis [101] encountered an additional 8 cases of dermatitis venenata from merthiolate.®

A report [3] on overtreatment dermatitis in dermatitis venenata due to plants disclosed that positive reactions to patch tests with various organomercurials were obtained in 113 cases. In these cases a dermatitis from plants had been changed into a mercurial eczematization by the injudicious use of antiseptics. Among the 113 patients having primary sensitization signs at the site of plant injury were 39 patients with toxic or sensitization "ids," 16 patients with lymphangitis and adenopathy and 6 patients with generalized dermatitis; 9 patients in the series had to be hospitalized.

### TOTAL INCIDENCE OF POSITIVE REACTIONS TO PATCH TESTS WITH ORGANOMERCURIAL COMPOUNDS OVER A THREE YEAR PERIOD

Past treatment patch tests [1] are a part of our workup in dermatologic patients. Practically as a routine, one or more mercurials are tested. This procedure, aside from being an important aid in diagnosis, has revealed the incidence of sensitization to mercury in patients with cutaneous diseases. From the point of view of dermatologic hygiene, this incidence is an appalling observation. The mercurials were applied to a wide range of cutaneous lesions. Already emphasized is the fact that a positive reaction to a patch test with a mercurial indicates a generalized sensitization. The incidence of primary sensitization signs at the site of injury, local irritative manifestations, without generalized sensitization, was doubtless significantly higher. The removal of the mercurial from these local or primary signs of sensitization obviously prevented a generalized sensitization.

Each patient was given patch tests with the mercurials they had applied to their cutaneous eruption, and, when feasible, additional organomercurials were tested with mercuric chloride as control. Patch tests with mercuric chloride aqueous, 0.1 per cent, were made in 579 cases; 29 single positive reactions occurred and a grouping of positive reactions in 60 cases. Mercuric chloride reacted simultaneously with ammoniated mercury in 15 cases, with merthiolate® tincture in 13 cases, with merthiolate® aqueous in 42 cases, with metaphen® in 1 case, with mercurochrome® in 4 cases and with mercocresols (mercresin®) in 7 cases. These figures suggest that the organomercurials on the skin (temperature, epithelium and secretions) readily dissociate, liberating mercury ions. The difference between the tincture and aqueous merthiolate® may be due to the presence of alcohol and eosin, retarding dissociation in the former. The single reactions cannot be explained except that they may indicate past mercurial contacts. The incidence of reactions to mercuric chloride was 15 per cent.

Eighty-nine patients were given patch tests with ammoniated mercury 5 per cent. Fifteen single positive reactions occurred, and in 26 cases there was grouping. Ammoniated mercury reacted with merthiolate® tincture in 5 cases, with merthiolate® aqueous in 9 cases, with metaphen® in 1 case, with mercurochrome® in 3 cases and with mercresin® in 4 cases. The incidence of reaction was 46 per cent. This is sufficiently high to exclude its use on diseased or injured skin by laymen. Patch tests with the tincture of merthiolate® were done in 238 cases; 9 single reactions occurred and 24 grouped. The tincture and aqueous merthiolate® reacted together in 15 cases. The incidence of positive reactions was 13 per cent. Patch tests with aqueous merthiolate® were done in 605 cases; 46 single reactions occurred, and in 57 there was grouping. The tendency to group reactions suggests that one mercurial on sensitizing the skin would also sensitize it to other organomercurials. Group reactions are better explained as past treatment exposures than as examples of multiple sensitivity. Positive reactions to patch tests with organomercurials are highly specific reactions. Ellis[101] stated the belief that the thiosalicylic acid radical is the usual sensitizing factor in merthiolate.® This radical would explain the single reactions to merthiolate® in the presence of negative reactions to mercuric chloride. Our data support the presence of two sensitizing factors in merthiolate.[3] Because venenata due to plants so violently disrupts the cutaneous protective barriers, it was stated that mercurial antiseptics were unsafe for self treatment of these dermatoses.[3] Twenty-five patients were tested with metaphen® with 5 single reactions and 2 grouped. The incidence was 28 per cent. Twenty-five patients were tested with mercurochrome,® with 2 single reactions and 4 grouped. The incidence was 24 per cent. Sixty-eight patients were tested with mercresin,® with 6 single reactions and 8 grouped. The incidence was 20 per cent.

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[13] Salle, A. J., and Lazarus, A. S.: A Comparison of the Resistance of Bacteria and Embryonic Tissue to Germicidal Substances: I. Merthiolate, Proc. Soc. Exper. Biol. & Med. **32**: 665 (Feb.) 1935; II. Metaphen, ibid. **32**: 937 (March) 1935; III. Mercurochrome, ibid. **32**:1057 (April) 1935. Nye, R. N.: The Relative in Vitro Activity of Certain Antiseptics in Aqueous Solution, J. A. M. A. **108**: 280 (Jan. 23) 1937.

[14] Hopkins, J. G., and others: Treatment and Prevention of Dermatophytosis and Related Conditions, Bull. U. S. Army M. Dept., June, 1944, no. 77, p. 42.

[15] Hopkins, J. G., and others: Fungistatic Agents for Treatment of Dermatophytosis, J. Invest. Dermat. **7**: *239 (Oct.) 1946.*

Twelve years ago, Rostenberg and Sulzberger[16] observed an incidence of 17.8 per cent patch test reactions to ammoniated mercury, 2.4 per cent to mercurochrome,® 3 per cent to metaphen,® and 8.7 per cent to mercury bichloride. The greatest percentage of reactions occurred in the dermatitis venenata series of cases. Of far reaching importance from the point of view of dermatologic hygiene is this climbing incidence of dermatitis venenata from organomercurial compounds. Steps to prevent dermatitis have been falteringly taken, but an issue that requires a decision is whether, as physicians, we approve of mass sensitization to the mercurials. Mercurials readily produce dermal and epidermal sensitization. An inorganic mercurial, like calomel, has produced an explosive, generalized, urticarial, eczematized dermatitis in the presence of cutaneous sensitization to ammoniated mercury.[17] Perhaps, before mercurial diuretics are given it would be well to patch test with mercury to make sure no epidermal sensitization exists. Sudden death has followed the injection of mercurial diuretics.

## SUMMARY

The pharmacologic action of the organomercurials on normal and injured skin is presented as a part of the challenge on the therapeutic usefulness of these antiseptics.

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[16] Rostenberg, A., and Sulzberger, M. B.: Some Results of Patch Tests, Arch. Dermat. & Syph. **35:** 433, 1937.

[17] Gaul, L. E., and Underwood, G. B.: Epidermal and Dermal Sensitization from Mercury, Its Effect on Vision and Nail Growth, J. Indiana M. A., to be published.

# PERORAL ADMINISTRATION OF UNDECYLENIC ACID IN PSORIASIS

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In recent years, certain fatty acids have been found to exert antifungal activity on the human skin and to be valuable in both prevention and treatment of some of the superficial dermatomycoses.[1] As far as we have been able to discover, practically nothing is known to date about the pharmacologic, toxicologic and therapeutic potentialities of the oral administration of these acids. However, previous studies[2] appear to justify the assumption that a portion of an ingested amount of certain fatty acids may retain chemical characteristics in the fat of the tissue and in the sebum. The selection of an unsaturated acid appeared of special interest for the purposes of the present studies.

Our first attempts were designed to investigate the possibility that the oral administration of undecylenic acid might have a therapeutic effect on recalcitrant fungous infections, in particular on tinea capitis (Microsporon audouini) and on onychomycosis.

Preceding its administration to human beings, experiments on the toxicity of undecylenic acid were carried out on small laboratory animals. Large quantities of the acid were fed these animals daily over a period of many months without producing any toxic manifestations.[3]

After numerous trials with flavoring admixtures had failed, the disagreeable taste of the acid made it necessary to administer it to human beings in gelatin capsules.

Following a few, and certainly insufficient, clinical trials in tinea capitis and onychomycosis, one of us (H. P.) gave some of the acid by mouth to several

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With the assistance of Leona Mandol and Diane Silberling.

From the New York Skin and Cancer Unit, Department of Dermatology and Syphilology, (Dr. Marion B. Sulzberger, Director), Post Graduate Medical School, New York University-Bellevue Medical Center.

[1] Sulzberger, M. B.; Shaw, H. C., and Kanof, A.: Evaluation of Measures Against Common Fungus Infections of Skin, U. S. Nav. M. Bull. **45:** 237, 1945. Shapiro, A. L., and Rothman, S.: Undecylenic Acid in the Treatment of Dermatomycosis, Arch. Dermat. & Syph. **52:** 166 (Sept.) 1945. Keeney, E. L., and Broyles, E. N.: Sodium Propionate in the Treatment of Superficial Fungus Infections, Bull. Johns Hopkins Hosp. **83:** 479, 1943. Keeney, E. L.; Ajello, L.; Broyles, E. N., and Lankford, E.: Propionate and Undecylenate Ointments in the Treatment of Tinea Pedis and an in Vitro Comparison of Their Fungistatic and Antibacterial Effects with Other Ointments, Bull. Johns Hopkins Hosp. **75:** 377, 1944. Keeney, E. L.; Ajello, L.; Lankford, E., and Mary L.: Sodium Caprylate: A New and Effective Treatment for Dermatomycosis of the Feet, Bull. Johns Hopkins Hosp. **77:** 422, 1945. Peck, S. M., and Russ, W. R.: Propionate-Caprylate Mixtures in the Treatment of Dermatomycoses with a Review of Fatty Acid Therapy in General, Arch. Dermat. & Syph. **56:** 601 (Nov.) 1947.

[2] Kuznitzky, E.: Experimentelle und klinische Beitraege zur Frage der H[illegible] f. Dermat. u. Syph. **114:** 691, 1913. Policard, [illegible] J.: Sur la fixation directe des graisses par les g[illegible], Compt. rend. Acad. d. sc. **174:** 1364, 1922. Policard, A., and Tritchkowitch, J.: Sur le mode de fonctionnement histophysiologique des glandes sébacées, J. méd. Lyon **67:** 644, 1922; cited by Rothman, S., and Schaaf, F.: Chemie der Haut, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1929, vol. 1, pt. 2. Burr, G. O., and Burr, M. M.: A New Deficiency Disease Produced by the Rigid Exclusion of Fat from the Diet, J. Biol. Chem. **82:** 345, 1929. Burr, G. O.; Burr, M. M., and Miller, E. S.: On the Fatty Acids Essential in Nutrition: III., J. Biol. Chem. **97:** 1, 1932. Sinclair, R. G.: The Metabolism of the Phospholipids: II. The Influence of Growth on the Phospholipid (and Cholesterol) Content of the White Rat, J. Biol. Chem. **88:** 575, 1930; III. The Comparative Influence of Various Fats on the Degree of Unsaturation of the Phospholipids and Neutral Fat in the Tissues of the Rat, ibid. **92:** 245, 1931; V. The Relationship Between the Amount of Fat Ingested and the Degree of Unsaturation of the Phospholipids and Neutral Fat in the Tissues of the Rat, ibid. **96:** 103, 1932. Turpeinen, O.: Effectiveness of Arachidonic Acid in Curing "Fat Deficiency" Disease, Proc. Soc. Exper. Biol. & Med. **37:** 37, 1937. Schoenheimer, R.: The Dynamic State of Body Constituents, Cambridge, Mass., Harvard University Press, 1942. Hansen, A. E.; Knott, E. M.; Wiese, H. F.; Shaperman, E., and McQuarrie, I.: Eczema and Essential Fatty Acids, Am. J. Dis. Child. **73:** 1 (Jan.) 1947.

[3] The inner organs as well as the skin of 10 animals were examined histologically by Dr. F. G. Zak (Fellow in Dermatology and Syphilology, Post Graduate Medical School, New York University-Bellevue Medical Center). No significant alterations were encountered.

patients with psoriasis.[4] Dramatic improvements observed in a few patients in private practice prompted us to study the possible therapeutic action on a larger scope in psoriatic patients of the New York Skin and Cancer Unit. This report deals with a total of 41 patients treated to date.

At this point we wish to emphasize as strongly as we can that no therapeutic claims are being made for this new method. It is the purpose of this preliminary report to outline briefly, and with all reservations, some clinical impressions obtained thus far and to submit oral undecylenic acid therapy as a method for further study.

### CLINICAL MATERIAL

In order, as far as possible, to exclude false conclusions due to coincidental spontaneous remissions, the majority of the subjects chosen were psoriatic patients whose lesions had proved refractory to other recognized forms of therapy, or who had not had spontaneous remissions for a substantial period of time preceding the new approach. All external medications were excluded. Dietary and other habits prior to the period of treatment, such as bathing, remained essentially unchanged. The patients were examined at intervals of one to two weeks.

### DOSAGE AND SIDE EFFECTS

The dosage has varied considerably during the development of these studies. Initially, relatively small amounts had been administered, but during the course of the observation it became apparent that larger doses were both required and tolerated. The most recently adopted schedule is as follows: three times daily 5 pearls,[5] each containing 0.44 Gm. of undecylenic acid, continued for at least three days. Five pearls are taken between breakfast and lunch, 5 between lunch and supper and 5 before the patient goes to bed. Thereafter, 3 times 10 pearls are taken daily for at least another three days, and this is followed by 3 times 15 pearls daily, which is continued for an indefinite length of time. Both time intervals and dosage must be considered tentative and subject to future modifications.

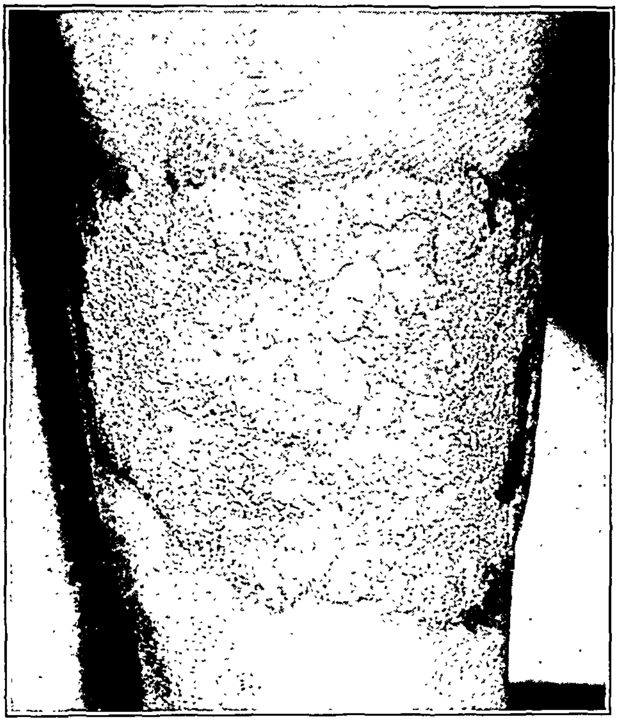

Fig. 1.—Hypertrophic psoriatic lesion on left calf of a 58 year old patient, which had been resistant for two years to topical treatments (chrysarobin, tar, ammoniated mercury, salicylic acid), liver injections, twelve roentgen treatments and ultraviolet irradiation.

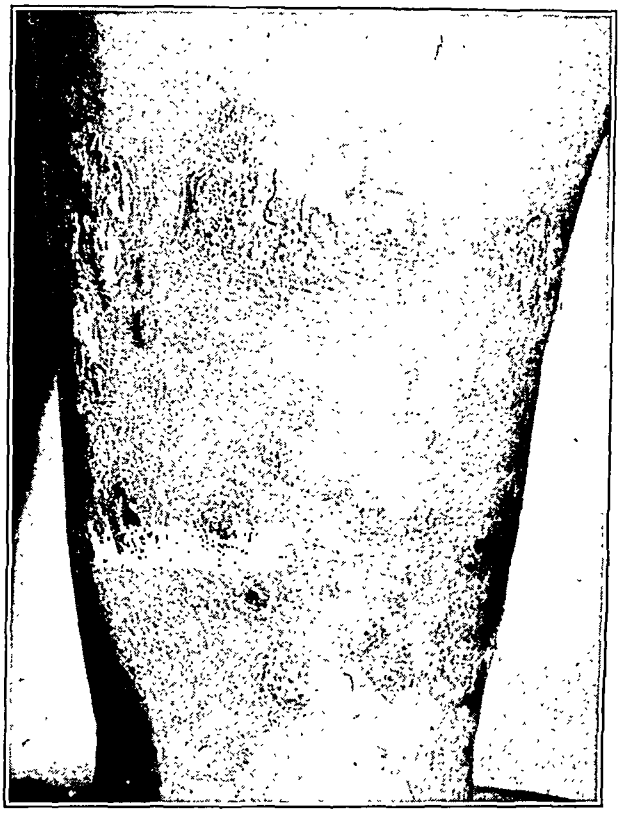

Fig. 2.—Same lesion as in figure 1, four months after the start of oral administration of undecylenic acid.

### RESULTS

No serious or lasting toxic effects were observed in this relatively small series. However, 19 of the 41 patients showed some symptoms or signs of mild gastrointestinal disturbance. Seven reported occasional eructations, with a peculiar "fishy" taste; 8 experienced nauseating sensations at times, and 2 complained of occasional vomiting. The stool became looser in most instances, and diarrhea occurred in 5 of the cases; constipation was present in 3. Some anorexia was noted by 5, and "heartburn" was occasioned in many of the patients.

In 2 young male patients, the occasional appearance of acneform follicular pustules was observed on the posterior aspect of the neck and on the thighs, but this may have been merely coincidental.

The described untoward effects were all transient. They occurred preponderantly at the onset of the treatment and usually subsided within seven to twenty-one days, even with continued administration of the same dose of the acid, without any, or with only mild and transitory recurrences during further increase in dosage. Thus, the early phase of the treatment and individual predisposition are apparently of greater significance for the occurrence of gastrointestinal disturbances than is the actual amount of undecylenic acid taken.

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[4] Perlman, H. H.: Undecylenic Acid Given Orally in Psoriasis and Neurodermatitis: A Preliminary Report, J. A. M. A. **139**: 444 (Feb. 12) 1949.

[5] The Decyl Pharmacal Company, Princeton, N. J., supplied this material. The pearls may be obtained from this firm as Declid® capsules.

In only 1 instance was the administration discontinued because of the intestinal complaints; this was in a female patient who complained of profuse diarrhea, beginning exceptionally late in treatment, namely, after twenty-three weeks (at this stage only one small lesion of psoriasis remained on the scalp).

### COURSE DURING TREATMENT

Two categories of clinical "improvement" are set up in this report. One, "improved," includes only cases with very substantial degrees of improvement; the other, "somewhat improved," includes cases with less impressive, though distinct, improvement. The former group is restricted to those cases in which the rate of improvement may perhaps have exceeded the range of any "spontaneous" involution which might occur in so erratic a disease as psoriasis. In the second group, i. e., that designated "somewhat improved," the occurrence of merely coincidental fluctuations of the picture (e. g., in some patients with eruptive forms of the disease) appeared possible in at least some of the cases. The table gives our results to date.

*Clinical Results* *

| | Number of Patients | Percentage |
|---|---|---|
| Improved | 12 | 30 |
| Somewhat improved | 15 | 37 |
| Unchanged | 10 | 25 |
| Worse | 3 | 7 |

*A total of 40 patients with skin lesions were treated for a period of two to twenty-seven weeks.

The shortest period of treatment after which unequivocal improvement ("improved") was recorded was two weeks; the longest period was two and a half months. In 3 cases of this group, the favorable course was preceded by a period of aggravation of the condition. New lesions had developed, and old ones had enlarged and become more intensely inflamed, before a sudden involution was observed. The earliest improvement in the "somewhat improved" group was noticed after two weeks and the latest after twelve weeks, followed gradually by further improvement.

Particularly in the "improved" group, some pattern in the process of involution could often be discerned. First, there was relief from any itching which may have been present, and thereupon flaky desquamation was noticeable, preponderantly in the central part of the lesions. Simultaneously, or very soon thereafter, the inner part of the plaques became flatter and paler, which was followed by the appearance of clinically normal, usually somewhat hyperpigmented, skin. Almost invariably, an annular zone at the periphery of the lesions showed the longest persistence; and finally the remaining ring-shaped walls around a clear center disintegrated into individual papules which were the last to disappear (figs. 1 and 2).

In 2 patients in the "improved" group, complete freedom from lesions was observed after two and a half months. The administration was continued in both cases for one month after the clearing, without any recurrence, and was then stopped. These patients at the time of writing were returning for observation.

In 2 patients in whom treatment was discontinued a few weeks after improvement had started (in one because of circumstances preventing attendance at clinic, in the other for purposes of trial), the psoriasis once more became aggravated and new papules appeared. With resumed administration, improvement was noted again.

### COURSE OF PSORIASIS WITH ARTHROPATHY

Among the 40 selected patients, 7 were suffering from psoriasis with arthropathy. One additional patient (a close relative of one of us) with psoriatic arthropathy, who was free from skin lesions at this time, was subjected to the same treatment. Seven of these 8 patients experienced decided relief from pain and from restriction of motility with the new treatment, while only slight, if any, improvement was noted by the remaining patient.

### COMMENT ON RESULTS

In a disease with a natural course as unpredictable as that of psoriasis, in a disease so well known to be capable of "spontaneous" remissions or favorable response to any new approach at any time, attempts to evaluate a new therapeutic method may easily lead to erroneous impressions. This holds true, in particular, when the number of patients is as small as in the present series. However, the described unequivocal improvement in 30 per cent of psoriatic patients, most of whom suffered from a stubborn form of the disease, would make it appear somewhat unwise to assume that these results were all merely coincidental. The relapses observed in 2 instances during interruptions of the treatment, and the renewed improvements with its resumption, favor the hypothesis that the medication might have exerted some beneficial influence.

Though much more experience is necessary before definite conclusions can be drawn, the present results appear to us to warrant the encouragement of other dermatologists to study this form of medication. It is certain that more adequate control series are needed in which the effects of purging alone are examined, as well as controls treated with therapeutically inert administrations, e. g., "placebo" pearls. Investigations along these lines are now in progress.

### RATIONALE

No rationale underlying the new therapeutic approach can be offered at this early stage of the investigations. The possible connection between the effects of fatty acid administration and the widely postulated, but still obscure, disturbance in lipid metabolism,[6] with the accumulation of fat manifested histologically in the skin of psoriatic persons,[7] immediately springs to mind. There may also be some relation to the regimens of antipsoriatic treatment which restrict the intake of animal fat, or which introduce lipotropic substances, as suggested by earlier investigators.[8]

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6. (*a*) Gruetz, O., and Buerger, M.: Die Psoriasis als Stoffwechselproblem, Klin. Wchnschr. **12:** 373, 1933. (*b*) Gruetz, O.: Neue histologische Beitraege zum Psoriasis-Problem, Arch. f. Dermat. u. Syph. **177:** 246, 1938.

7. Madden, J. F.: Histologic Studies of Uninvolved Skin of Patients with Psoriasis, Arch. Dermat. & Syph. **44:** 655 (Oct.) 1941.

8. Gruetz and Buerger.[6a] Gross, P., and Kesten, B.: Treatment of Psoriasis with Lipotropic Substances Derived from Foodstuffs, Arch. Dermat. & Syph. **47:** 159 (Feb.) 1943. Walsh, E. N.; Clark, D. E.; Dragstedt, L. R., and Becker, S. W.: Further Observations on the Use of Lipocaic in the Treatment of Psoriasis, J. Invest. Dermat. **4:** 59, 1941.

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| Normal controls; average threshold of readings in healthy subjects[12] as of January 1949 | 66 |
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| Net change | (—) 25 |
| *Group II—Somewhat Improved* | |
| Psoriatic patients before treatment; average threshold of initial readings | 81 |
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| *Group III—Unchanged* | |
| Psoriatic patients before treatment; average threshold of initial readings | 76 |
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| Difference | 26 |
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| Difference | 26 |
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| Psoriatic patients before treatment; average threshold of initial readings | 78 |
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| Difference | 28 |
| After Treatment (the tremendous difference between readings taken at the same time in psoriatic and healthy subjects may be noted). | |
| Psoriatic patients after treatment with undecylenic acid; average threshold of readings as of January 1949 | 140 |
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| Difference | 74 |
| Net change | (+) 46 |

### SUMMARY

Forty-one psoriatic patients were treated with undecylenic acid perorally. Many of these patients were suffering from recalcitrant forms of the disease. No external medication was used.

The standard dose eventually adopted, which was also the highest daily dosage attained, was 19.8 Gm. of the acid, in the form of 45 pearls of 0.44 cc. each, i. e., 3 times 15 pearls per day. The ingestion was found free from serious or lasting toxic effects. Mild gastrointestinal disturbances occurred, but only in 1 instance did these interfere with the continuation of the treatment schedule.

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It appears possible that the undecylenic acid had favorable influence on the course of some of the cases in the improved group observed. Much further investigation will be needed before definite conclusions can be drawn. The object of this report is to submit the method and its many possible modifications for more extensive clinical evaluation and further fundamental study.

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# ON ALLERGY TO COTTONSEED OIL

H. S. BERNTON, M.D.
E. J. COULSON, Ph.D.
and
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Washington, D. C.

The question of specific sensitiveness to edible cottonseed oil in contradistinction to cottonseed is worthy of recognition and more critical study than it has received. Discussions of cottonseed sensitiveness in textbooks on allergy generally imply that cutaneous sensitiveness to allergenic extracts of cottonseed or cottonseed meal signifies clinical sensitiveness to foods containing salad oil or vegetable shortening made from cottonseed oil. A pronounced difference of opinion concerning this concept is displayed in the testimony of six allergists who appeared as expert witnesses at a public hearing[1] in relation to label declaration of vegetable oils in salad dressings.

Opportunity to study allergy to cottonseed oil is rare.[1] Hence, worthy of record are results of a concurrent comparison of two cottonseed-sensitive allergic subjects, one of whom disclaimed and the other proclaimed a demonstrable sensitiveness to edible cottonseed oil.

## REPORT OF CASES

CASE 1.—A male asthmatic patient (S.), age 34, exhibited multiple sensitiveness in cutaneous tests with several allergens, including cotton and cottonseed. His clinical history showed convincingly negative reactions to cottonseed oil. This conclusion was confirmed by oral administration, under observation, of 1 fluidounce (29.6 cc.) of cottonseed salad oil. Ingestion of this dose three hours after breakfast induced no immediate or delayed symptoms. At a later visit a specimen of blood was taken from this patient, the source of serum S.

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The family history of this subject is positive for allergy. Hay fever, identified with pollen sensitivity, developed in 1930. Two years later he was afflicted with hives, which could be induced by trial contact with nonabsorbent cotton or by sleeping on a cotton-filled mattress. At this time, abdominal discomfort, which he attributed to ingestion of foods containing hydrogenated vegetable oil shortenings, led him to suspect a pronounced sensitiveness to edible cottonseed oil. This diagnosis, he concluded, was confirmed by his positive reactions to cutaneous tests with cottonseed extract. Clinical sensitiveness to several other foods became evident in 1943, proved by dietary trial and elimination from the diet. However, only his clinical evidence in support of the diagnosis of his acute allergic sensitiveness to cottonseed oil is pertinent to the present study.

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In contrast to the invariable allergic reaction resulting from eating foods containing cottonseed oil, this subject stated that ingestion of corn oil or olive oil caused him no distress. These oils were regularly used in his home. He was confident, therefore, that he could distinguish cottonseed oil from corn oil or olive oil by the consistent occurrence of perceptible allergic symptoms whenever he ingested even a comparatively small quantity of cottonseed oil. But he was reluctant to undergo the discomfort required to demonstrate this capacity. Fortunately, however, this subject was keenly interested in our studies of allergens of cottonseed products and complied with our request for his collaboration. On Jan. 3, 1948, we received from him a quantity of his blood serum, which is identified as serum O. Subsequently, he served as subject for a succession of discrimination trials to test his capacity to distinguish cottonseed oil by his symptoms of allergy.

## PASSIVE TRANSFER TESTS (SERUM S AND SERUM O)

Serum S and Serum O were investigated in comparative tests for reagins for cottonseed oil and for cottonseed. Reactivity of passively sensitized sites was determined by intracutaneous tests with cotton seed oil and with allergenic extracts of defatted cottonseed and, also, by oral administration of both oil and defatted cottonseed.

Nine recipients were given an intracutaneous injection in the left upper arm with 0.1 cc. of serum O. After an interval of three or more days, four sites were tested with 0.025 cc. of sterile cottonseed oil; three sites were tested with 0.01 mg. of CS-1A (an active protein component of cottonseed)[2]; and two sites were tested with unfractionated cottonseed extract (1:50,000). The skin of the anterior surface of the lower arm served for control injections. The controls and all passively transferred sites gave negative reactions in these tests.

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ingested 10 Gm. of defatted cottonseed in water. Whealing became perceptible on the left arm, at the serum S site, eight, fifteen and twenty-seven minutes, respectively, after ingestion. The serum O sites remained inactive.

Table 1.—*Discrimination Trials, Series I*

| Vial | Submitted | Response | Net Dose and Identity of Sample |
|---|---|---|---|
| E | April 1 | Positive | No cottonseed oil; 4.1 Gm. corn oil |
| H | April 5 | Negative | No cottonseed oil; 4.0 Gm. corn oil |
| F | April 12 | Negative | 0.6 Gm. cottonseed oil; 3.5 Gm. corn oil |
| A | April 19 | Positive | No cottonseed oil; 3.9 Gm. corn oil |
| D | April 26 | Negative | No cottonseed oil; 3.9 Gm. corn oil |
| B | May 3 | Negative | 0.6 Gm. cottonseed oil; 3.3 Gm. corn oil |
| C | ........ | .......... | No cottonseed oil; ... ..... corn oil |
| G | ........ | .......... | No cottonseed oil; ... ..... corn oil |

Results of the passive transfer tests were consistent. The presence of reagin for cottonseed was demonstrated in serum S; the absence of this reagin was proved for serum O. Each site sensitized with serum S reacted positively whether the water-soluble allergen of the cottonseed embryo was administered by direct injection into the sensitized site or by ingestion, while none of the sites sensitized with serum O showed any perceptible response. The tests employed failed to show the presence of a reagin for cottonseed oil in either serum S or serum O. After these tests were completed subject O (case 2) reported that he reacted negatively to cutaneous tests with corn oil, cottonseed oil and CS-1A, but an intracutaneous test with his own cottonseed extract elicited a positive reaction.

### TESTS OF DISCRIMINATIVE CAPACITY

Three series of ingestion trials were conducted to test the capacity of subject O to discriminate between samples of vegetable oil that were alike in color, viscosity, flavor and odor, but which differed with respect to the presence or absence of cottonseed oil. Series I and II were designed to yield statistically significant evidence of discrimination, or lack of it. Series III was designed to find the subject's threshold of allergic response to cottonseed oil.

Table 2.—*Discrimination Trials, Series II*

| Vial | Submitted | Response | Net Dose and Identity of Sample |
|---|---|---|---|
| K | May 18 | Negative | 2.1 Gm. corn oil; 2.1 Gm. olive oil |
| N | May 24 | Negative | 1.9 Gm. corn oil; 1.9 Gm. olive oil |
| O | June 1 | Negative | 2.2 Gm. cottonseed oil; 2.2 Gm. olive oil |
| J | June 7 | Positive | 2.0 Gm. corn oil; 2.0 Gm. olive oil |
| M | June 14 | Negative | 1.9 Gm. cottonseed oil; 1.9 Gm. olive oil |
| I | June 21 | Negative | 2.0 Gm. corn oil; 2.0 Gm. olive oil |
| P | June 28 | Negative | 1.9 Gm. corn oil; 1.9 Gm. olive oil |
| L | July 6 | Negative | 1.2 Gm.* cottonseed oil; 1.2 Gm.* olive oil |

* About one third of sample spilled; net dose was estimated.

Corn oil, cottonseed oil and olive oil used in these trials were purchased at retail and represent familiar brands of these salad oils. The manufacturer's representation of identity of each oil was confirmed. Each oil met the standards prescribed for it by the United States Pharmacopeia XIII.

Individual samples of each series were matched in appearance by addition of butter color. Samples comprising each series were judged by three chemists to be indistinguishable in taste and appearance. Series I and II were submitted in 4 cc. vials, each containing a single trial dose of about 4 Gm. of oil. For series III, 7.5 cc. vials were used to provide a range of larger doses of cottonseed oil.

In each series both the distribution of the samples containing cottonseed oil and the order of presentation of samples were randomized. The subject was told in advance of the trials the number of samples to be submitted in each series, the approximate dose and the number of times cottonseed oil might be encountered. Neither the subject nor the dispenser of the vials was informed of the composition of the individual samples until the last report of each series had been recorded.

The subject complied with our instructions to ingest each sample without other food when free from symptoms of allergy. He returned each emptied vial with a report of his decision, positive or negative, to indicate presence or absence of cottonseed oil, according to his perception of allergic response. Each succeeding sample, after the first one of series I and II, was submitted on return of the emptied vial of the preceding sample. The net weight of each sample ingested and the net dose of cottonseed oil were calculated from the difference in weights of each filled and emptied vial.

Table 3.—*Discrimination Trials, Series III**

| | | | Cottonseed Oil | |
|---|---|---|---|---|
| Subject's Comment | Subject's Decision | Vial | Gm. | Percentage |
| Not the slightest discomfort (no. 4, 5, 6) or no recollection of discomfort (no. 8). Definitely negative | Definitely negative, no. 4,5,6,8 | 4<br>5<br>6<br>8 | None<br>3.6<br>None<br>1.9 | <br>50<br><br>25 |
| Slight, transient abdominal discomfort; ignored unless looking for symptoms. Not quite definitely negative | Qualified negative, no. 1,2,9 | 1<br>2<br>9 | 7.3<br>3.6<br>5.6 | 100<br>50<br>75 |
| Abdominal pain mild but noticeable, lasting to one-half hour. Reaction from no. 0 was more than from no. 3. Considered doubtful positive reactions | Qualified positive, no. 0,3 | 0<br>3 | 1.9<br>5.6 | 25<br>75 |
| Definitely positive reactions. Prompt appearance (10 min.) of moderate to severe abdominal pain, persisting for 1 hour or more. Unquestionably positive reactions | Definitely positive, no. 7,10 | 7<br>10 | 1.9<br>3.6 | 25<br>50 |

* Order of ingestion of samples: No. 10, 6, 7, 4, 2, 1, 9, 3, 5, 8, 0.

The last two samples of series I were not submitted because the results of the preceding six trials provided convincing evidence of inability of the subject to distinguish cottonseed oil in dosage of 0.6 Gm. When this evidence was presented to the subject he concluded that he was less sensitive to cottonseed oil than he had presumed. Accordingly, he agreed to try another series in which a larger dose of cottonseed oil would be included in two or three of eight samples. For benefit of flavor the samples of series II were composed either of equal parts of olive oil and corn oil or olive oil and cottonseed oil.

Results of series II provided conclusive evidence that the subject did not distinguish cottonseed oil when ingested in doses corresponding to quantities of this fat commonly encountered in a dietary portion of staple food—salad or bread, for example. This evidence prompted the subject to propose a trial to establish his threshold of allergic sensitiveness to cottonseed oil. Series III was designed for that purpose.

Eleven samples of series III were submitted to the subject with the information that they were composed of samples of corn oil, and mixtures of corn and cottonseed oil that provided net doses of cottonseed oil in a range within and above the quantities ingested in the preceding series. Because series III was designed to establish the threshold of allergic response to cottonseed oil, the subject chose to qualify his response to each trial. His responses are classified and summarized in table 3.

Results of series III provided no evidence of discrimination consistently relatable to net dosage of cottonseed oil. Therefore, no evidence is deducible from these data of a threshold of sensitiveness to an allegedly allergenic component of the samples composed of corn and/or cottonseed oil. This series provided two samples of 7.3 Gm. of corn oil and the following net doses of cottonseed oil: three of 1.9 Gm., three of 3.6 Gm., two of 5.6 Gm. and one of 7.3 Gm.

## COMMENT

Two cottonseed-sensitive allergic subjects have been studied. They both exhibited cutaneous sensitiveness to aqueous extracts of defatted cottonseed and to cotton. With respect to evidence of clinical sensitiveness to edible cottonseed oil these subjects, S and O, represent opposite extremes. Subject S reported no symptoms suggestive of clinical sensitiveness to cottonseed oil. On the other hand, subject O supported his own positive diagnosis by a clinical history clearly indicative of a high degree of allergic sensitiveness to cottonseed oil. A unique opportunity was afforded by the coincident availability of these subjects to investigate relationships between cutaneous sensitiveness to allergenic extracts of the cottonseed embryo, and clinical sensitiveness to the edible oil derived from this part of the seed.

Comparison of serums of subject S and subject O by passive transfer technic demonstrated the reagin for cottonseed only in serum S. No evidence of sensitiveness to cottonseed oil was manifested in either subject by direct cutaneous or passive transfer tests with the oil. Oral administration of cottonseed oil to subject S confirmed his opinion that ingestion of this oil caused no perceptible reaction. Collaboration of subject O enabled us to conduct discrimination trials designed to test the validity of the clinical evidence of his sensitiveness to ingested cottonseed oil. These trials yielded conclusive evidence that he could not distinguish cottonseed oil from corn oil or olive oil by perception of allergic symptoms when he ingested samples containing cottonseed oil. Therefore, his diagnosis of clinical sensitiveness to cottonseed oil was not substantiated.

Results of our comparison of 2 cottonseed-sensitive subjects are relevant to certain of our previously reported investigations dealing with immunologic properties of cottonseed products. In 1940, Bernton, Spies and Stevens[3] described a series of experiments which led to the following conclusions: (1) that edible cottonseed oil does not contain the water-soluble cottonseed allergen which is readily extractable from the defatted cottonseed kernel (embryo) or from commercial cottonseed flour or meal and, (2) that cutaneous sensitiveness to such extracts does not imply clinical sensitiveness to cottonseed oil. Later, Coulson and Stevens[4] reported the preparation of water-soluble antigenic fractions from widely different grades of cotton linters. Neither the higher grade of linters, which was essentially free from visible hull material, nor the lower grade, which was heavily laden with hull particles, contained the cottonseed antigen. These observations clearly distinguished the water-soluble antigen of the seed hairs from that of the cottonseed embryo. This distinction between antigens of different tissues of the entire ginned cottonseed justifies the inference that a corresponding distinction may be anticipated with respect to clinical sensitiveness to cotton linters and to cottonseed flour or meal. At least, substantial confirmatory evidence should be expected to support a claim of immunologic interrelationship in clinical sensitiveness to essentially different commodities derived from cottonseed.

In 1942 Figley[5] reported his study of 2 cases of suspected sensitiveness to cottonseed and cottonseed oil. A tentative diagnosis of sensitiveness to the water-soluble seed allergens was not substantiated for either case by direct or by passive transfer tests. For both cases, however, the diagnosis of clinical sensitiveness to cottonseed oil appeared to be substantiated by results of a few ingestion trials, which, for one of the patients, were conducted in collaboration with one of us (H. S.). Subsequent study of both patients by Figley generated doubt about this diagnosis. Justifiable skepticism has since been expressed by Figley[1] concerning the adequacy of the published data[5] for proof of clinical sensitiveness to cottonseed oil in either of these cases. Consequently, these 2 cases must be classed with those reported in the literature, and in legend, for which the diagnosis of clinical sensitiveness to ingested cottonseed oil lacks substantial confirmatory evidence. While allergy to ingested cottonseed oil may exist, no case on record has been found for which this diagnosis has been confirmed by conclusive, scientific evidence.

## SUMMARY AND CONCLUSIONS

Two cottonseed-sensitive allergic cases have been compared with reference, principally, to diagnostic criteria of clinical sensitiveness to edible cottonseed oil. In 1 case, the diagnosis of specific sensitiveness to cottonseed, with no implied sensitiveness to ingested cottonseed oil, was corroborated by evidence derived from passive transfer studies and demonstration of tolerance to a liberal dose of cottonseed oil. In the other case, the diagnosis of clinical sensitiveness to ingested cottonseed oil was not confirmed. No evidence of discrimination was displayed by the subject when he endeavored to distinguish cottonseed oil solely by his perception of allergic reaction to ingested doses in the range of 0.6 to 7.3 Gm. Comparative study of these cases adds supporting evidence to the conclusion that specific sensitiveness to water-soluble, allergenic extracts of defatted cottonseed (embryo) does not imply clinical sensitiveness to edible cottonseed oil.

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[3] Bernton, H. S.; Spies, J. R., and Stevens, H.: Significance of Cottonseed Sensitiveness, J. Allergy **11**: 138 (Jan.) 1940.

[4] Coulson, E. J., and Stevens, H.: Antigenic Relationship of Cotton Linters, Dust, and Dust Precursors, J. Allergy **11**: 537 (Sept.) 1940.

[5] Figley, K. D.: Cottonseed Oil Sensitivity, Letters Internat. Correspond. Club of Allergy **5**: 30, 1942.

# INCIDENCE OF PELLAGRA

## Studies in the Cincinnati General Hospital 1935-1947

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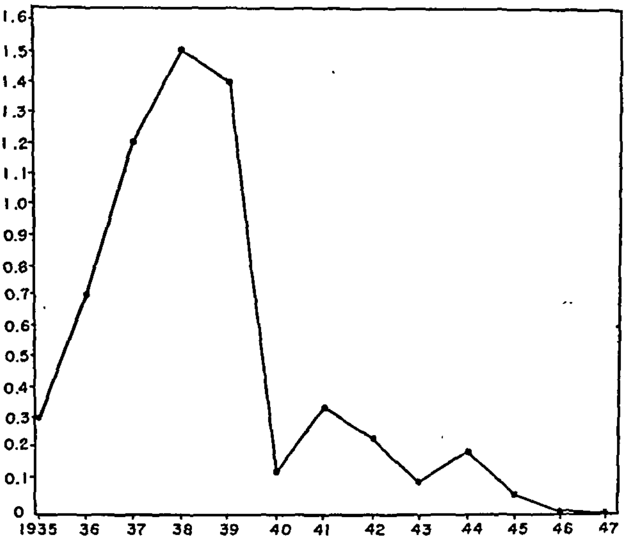
In 1942 Bean, Spies and Blankenhorn[1] pointed out that, far from being an exotic disease, pellagra was relatively common in hospitals in Cleveland and Cincinnati during a period when an intensive study of nutritional disease was in progress. At the Lakeside Hospital, Cleveland, initial admissions for pellagra constituted 1.5 per cent of all medical ward admissions from 1930 to 1935, while at the Cincinnati General Hospital such cases constituted 0.95 per cent of medical admissions from 1935 to 1939. These figures were compared with those reported from the Baltimore City Hospital, Charity Hospital (New Orleans), Hillman Hospital (Birmingham, Ala.), University of Georgia Hospital (Augusta) and the Duke Hospital. It is the purpose of the present paper to extend the data on admissions for pellagra at the Cincinnati General Hospital through 1947 and discuss the sharp decrease in incidence.



Incidence of pellagra expressed as percentage of all medical ward admissions (vertical values) 1935-1947. The years are shown in the horizontal row of figures.

SUBJECTS AND CRITERIA

We have included in our analysis all cases of patients presenting bilateral pellagrous dermatitis and glossitis, since these criteria for diagnosis were used in the earlier paper.[1] Only patients seen by at least one of us were used, and there was complete agreement regarding the diagnosis in all cases observed by more than one of us. One or more of us was in close touch with the wards at all times during the study, and many patients suspected of having some variety of malnutrition were brought to our notice by members of the house staff. Efforts to find all cases of vitamin deficiency in the hospital continued without intermission. Only patients admitted or transferred to the medical wards are included. Consultation regarding the possible diagnosis of pellagra on other wards brought in only a few cases. We have no reason to believe that alterations in requirements for hospital admission, shifts in population or other circumstances have produced any significant influence in the remarkable change in the incidence of florid pellagra in this hospital. Whereas we suspected that the rather abrupt rise in the number of cases of pellagra reported previously[1] reflected to some degree the increase in diagnostic skill and awareness, we do not consider that the sharp decline in incidence signifies a decline in interest or diagnostic ability.

RESULTS

In the figure and in the table we present the data on initial admissions for pellagra for the years 1935-1947 inclusive. The most striking feature of the changing yearly incidence is the precipitous drop in the number of cases of pellagra from 1939 to 1940, when the total number of cases fell from 34 to 3. This did not represent an isolated experience, since the low rate of admission for pellagra continued with minor fluctuations through 1947. In 1946 and 1947 there were no cases of pellagra on the medical wards, and only 1 patient had been seen through July 1948.

A similar decrease occurred in the frequency with which the diagnosis of nicotinic acid deficiency was made, though our records are not complete in this regard.

COMMENT

The facts presented demonstrate that pellagra was disappearing from the wards of the Cincinnati General Hospital during a period when an intensive program of nutritional investigation was in progress and an active search for cases was going on. We believe that no lapse of interest or change in requirement for hospital admission has produced an artificial bias in the figures. A consideration of pertinent factors which may have had a part in causing this decrease in cases of pellagra has been made without the assurance that the true explanation has been found. We will discuss the possible influences of the general economic state of the community, employment, the war, rationing, education, bread enrichment, alcohol addiction and self medication with vitamins.

It is impossible to find any true measure of the relative or absolute changes in the general economic situation of the clientele of the hospital. As a rough approximation, the index of industrial employment for Cincinnati has been utilized. This is a comparative index using the average for the years 1935-1939 as the standard of 100. In the table we have listed the approximate yearly index, which rose steadily from 1939 through 1943 and then began to decrease. Thus there is a roughly inverse relationship between this measure of prosperity and the number of cases of pellagra in the hospital. Presumably months or years of dietary imbalance are needed before the stigmas of pellagra reach the stage where diagnosis is obvious. Correction of the deficiency by dietary means may bring about restoration in the direction of normal more rapidly. We are of the opinion that the general improvement in the economic state of the people of Cincinnati during the late 1930's and early 1940's is the primary reason for the observed decrease in pellagra.

Since a large proportion of the cases of pellagra in this hospital are associated with alcohol addiction, a general reduction in consumption of alcoholic bever-

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[1] Bean, W. B.; Spies, T. D., and Blankenhorn, M. A.: The Incidence of Pellagra in Ohio Hospitals, J. A. M. A. 118: 1176 (April 4) 1942.

ages in Cincinnati might be expected to reduce the incidence of pellagra. During the period of sharp decline in incidence there was no such decrease in sales or manufacture of distilled or fermented alcoholic beverages locally.

The effect of rationing, which tended to make nutritious foods available on a per capita basis rather than on an economic one, came into operation after the abrupt fall in incidence of pellagra. It is possible that it helped perpetuate the trend.

In the table we have indicated the periods at which the program of enrichment of bread was put into practice on a voluntary basis (about 30 per cent effective locally) and on an obligatory basis (about 90 per cent effective locally).[2] Since pellagra had become relatively rare before bread was treated with vitamin supplements, this program did not initiate the change but may have served to sustain the trend of improvement. The same is true of the educational endeavors of the very active groups giving instruction in better nutrition which were not organized until American participation in World War II was in progress.

*Data on Initial Admissions for Pellagra, 1935-1947*

| Year | Medical Ward Admissions | Cases of Pellagra | Percentage | Approximate Index of Industrial Employment * | Average Weekly Wages Cincinnati* | Estimated Percentage of Bread Enriched |
|---|---|---|---|---|---|---|
| 1935 | 3,173 | 8 | 0.3 | 100 | $22.85 | .. |
| 1936 | 3,169 | 23 | 0.7 | | 24.03 | .. |
| 1937 | 2,440 | 28 | 1.2 | | 25.99 | .. |
| 1938 | 2,293 | 35 | 1.5 | | 24.06 | .. |
| 1939 | 2,482 | 34 | 1.4 | | 25.80 | .. |
| 1940 | 2,438 | 3 | 0.12 | 125 | 27.62 | .. |
| 1941 | 2,392 | 8 | 0.33 | 150 | 32.25 | 30 |
| 1942 | 2,239 | 5 | 0.23 | 160 | 38.95 | 60 |
| 1943 | 2,202 | 2 | 0.09 | 170 | 44.21 | 90 |
| 1944 | 2,167 | 4 | 0.18 | 160 | 49.30 | 90 |
| 1945 | 2,143 | 1 | 0.05 | 148 | ..... | 90 |
| 1946 | 1,789 | 0 | 0 | 120 | ..... | .. |
| 1947 | 1,981 | 0 | 0 | ... | ..... | .. |

* From figures supplied by the Cincinnati Chamber of Commerce.

We have no data on the per capita sales of various vitamin preparations which came into vogue in the early 1940's. It has been our experience that pills have rarely constituted a significant source of vitamins in the class of patients admitted to the hospital. It is probable that the increasing awareness of vitamin, protein and other factors on both the medical and surgical services has reduced the number of cases of secondary pellagra developing on the wards. This would have accounted for only a fraction of the decline.

### CONCLUSIONS

1. There has been a striking decrease in the number of cases of pellagra seen in the Cincinnati General Hospital in recent years.

2. Since 1940 pellagra has occurred with increasing rarity, and in the last thirty months only 1 case has been seen.

3. This change occurred during a period when active studies of the disease were in progress and interest was sustained.

4. The cause for this decrease is unknown. The most likely reason is the general improvement in the economic state of the population from which the hospital draws its patients.

5. The program of enrichment of flour and various educational activities may have served to sustain the trend but did not initiate it.

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[2] Williams, R. R.: Personal communication to the authors.

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# Clinical Notes, Suggestions and New Instruments

## HYPERPYREXIA FOLLOWING THORACOLUMBAR SYMPATHECTOMY

### Report of Two Cases Occurring During a Heat Wave

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As greater numbers of patients are subjected to thoracolumbar sympathectomy for essential hypertension, it becomes of increasing importance to learn how this operation affects the function of the organism in relation to its environment. Although it has long been known that denervation of the sympathetic nerve supply results in abolition of the sweating mechanism in the area involved, there have been to our knowledge no cases reported in which this deficiency has proved clinically deleterious to the patient.

For this reason we are reporting in detail 2 cases of hyperpyrexia which occurred during the heat wave of Aug. 25 to 30, 1948, in New York City. Both patients had almost complete absence of the sweating mechanism due to previous bilateral thoracolumbar sympathectomy done by the technic of Hinton and Lord.[1]

### REPORT OF CASES

Case 1.—A. R., a 45 year old lithographer, was admitted to the hospital for the second time on Aug. 28, 1948, complaining of heat, feverishness and some dyspnea. He noted that his symptoms had coincided with the peak of the heat wave, and he entered the hospital when his family doctor found his temperature to be 104 F.

*Past History.*—A known hypertensive patient of one and a half years' duration, the patient was first admitted to the hospital on July 28, 1948. Blood pressure was 240 systolic and 120 diastolic. The amobarbital test had lowered this to 120 systolic and 90 diastolic. Physical examination, except for hypertension, early eyeground changes and slight cardiac enlargement, had revealed no abnormalities. Laboratory examination included blood cell count, urinalysis, urine concentration test, studies of the chemical content of the blood and urea clearance. There was a faint trace of albumin. The results of other tests were within normal limits. Electrocardiographic changes were consistent with left ventricular hypertrophy.

On August 2, the patient underwent left thoracolumbar sympathectomy. All the ganglions from the second thoracic to the third lumbar, inclusive, were removed, as were the splanchnic nerves. On August 10, right thoracolumbar sympathectomy (second thoracic to third lumbar) with excision of the three splanchnic nerves was performed. The postoperative courses were not remarkable. The patient was essentially afebrile with the exception of two or three days. He was discharged on August 21, eleven days after the second operation. His resting blood pressure varied from 110 systolic and 70 diastolic to 138 systolic and 102 diastolic.

*Physical Examination.*—The blood pressure was 160 systolic and 80 diastolic, temperature 104 F., pulse rate 110 and respirations 28. The patient was well developed and nourished and appeared slightly dehydrated. He seemed to be drowsy and moderately ill. The skin was hot and dry everywhere. The lung fields were not remarkable in view of the recent operative intervention, and the results of the remainder of the examination were not contributory.

*Laboratory Observations.*—On August 28 the red blood cell count was 4,800,000, hemoglobin 13.5 Gm. and white blood cell count 7,400, with 64 per cent polymorphonuclear cells, 1 per cent eosinophils, 2 per cent basophils, 23 per cent lymphocytes and 10 per cent monocytes. A urinalysis showed a specific

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[1] Hinton, J. W., and Lord, J. W., Jr.: Operative Technique of Thoracolumbar Sympathectomy, Surg., Gynec. & Obst. 83:643-646 (Nov.) 1946.

gravity of 1.012, very faint trace of albumin, acid reaction and an occasional white blood cell. On August 30, the white blood cell count was 6,650, with 63 per cent polymorphonuclear cells, 1 per cent eosinophils, 29 per cent lymphocytes and 7 per cent monocytes. A roentgenogram of the chest on August 31 revealed small, localized areas of pleural thickening or fluid posteriorly and bilaterally. A small area of localized hydropneumothorax was seen on the right, at the level of the sixth rib posteriorly.

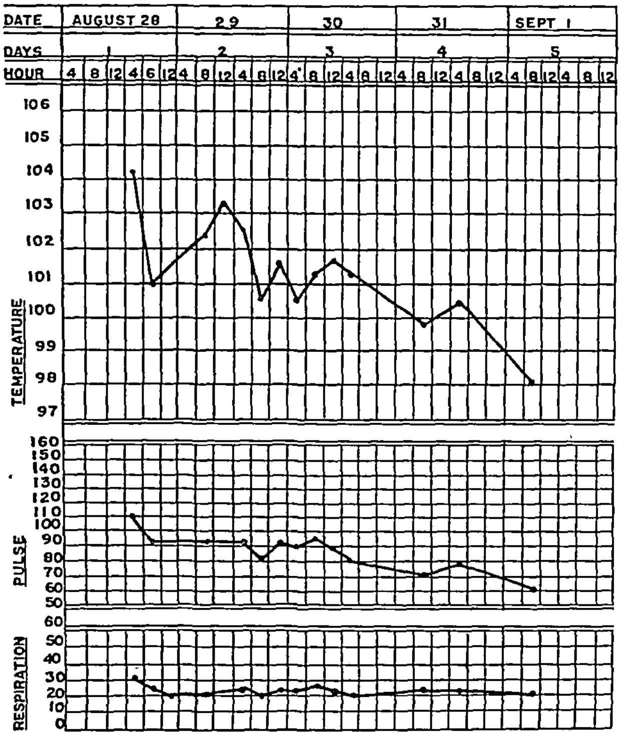

Fig. 1 (case 1).—Graphic temperature, pulse rate and respiration chart.

*Course.*—Bilateral diagnostic thoracenteses obtained only 20 cc. of old blood on the right. The patient was placed in a cold wet pack intermittently over a thirty-two hour period. On the third hospital day, his temperature remained between 100.6 and 101.6 F. The following day it fell to 99.6 to 100.4 F., and the patient became ambulatory. He was discharged on the fifth day.

Although the patient appeared somewhat drowsy on admission, his clinical appearance was not that of a dangerously ill patient. He took fluids and food fairly well. He received no chemotherapy during this period of hospitalization. At no time was perspiration noted.

*Comment.*—It is felt that this patient's hyperpyrexia was due to excessive environmental heat. The normal leukocyte count ruled against an infectious process, as did the favorable response to conservative therapy directed solely at reducing the body temperature.

Case 2.—K. M., a 53 year old housewife, was first admitted to the hospital with the complaints of nervousness and easy fatigability of seven years' duration. There was, in addition, a history of palpitations and occasional blurring of vision. One month before admission she experienced an episode of numbness in the left hand and dizziness which persisted for two to three weeks.

*Past History.*—The patient had undergone oophorectomy for "chocolate cyst" two years before admission, and she had had two normal pregnancies.

*Family History.*—The father had died of nephritis at age 45, and a brother died of a stroke at the age of 46.

*Physical Examination.*—The blood pressure was 230 systolic and 130 diastolic. Temperature, pulse rate and respirations were normal. Eyeground examination revealed some arterial narrowing and arteriovenous nicking. The heart was slightly enlarged to percussion. The results of the remainder of the physical examination were normal.

*Laboratory Observations.*—The red blood cell count was 4,170,000, hemoglobin 12.0 Gm. and white blood cell count 14,100, with 79 per cent polymorphonuclear cells. Urinalysis showed a specific gravity of 1.018; there was no albumin or sugar, and the results of other microscopic examinations were normal. The blood nonprotein nitrogen, urea nitrogen, creatinine and urea clearance were all within normal limits, as was the result of the urine concentration test. The electrocardiogram showed inversion of the T wave in lead 3, with left axis deviation considered consistent with left ventricular hypertrophy. The roentgenogram of the chest showed slight cardiac enlargement of the left ventricular type. The amobarbital sodium test lowered the blood pressure to 170 systolic and 100 diastolic.

*Course.*—On August 16, left thoracolumbar sympathectomy was performed, with complete removal of the paravertebral ganglions from the stellate ganglion (seventh cervical to first thoracic) to the third lumbar, inclusive. The greater, lesser and least splanchnic nerves were also excised. The postoperative course was essentially afebrile. On paracentesis of the left side of the chest on August 19, 21 and 23, there was obtained a total of 600 cc. of serosanguinous fluid. On August 24, right thoracolumbar sympathectomy was performed, with removal of the ganglions from the second thoracic to the third lumbar, inclusive, as well as the splanchnic nerves. A blood transfusion of 1,000 cc. was given.

On the first postoperative day, the blood pressure was maintained well, and the continuous infusion of 0.002 per cent phenylephrine hydrochloride in 10 per cent dextrose solution was stopped. The temperature rose to 102 F., and the patient became apprehensive and slightly dyspneic. Right thoracentesis at this time resulted in removal of 430 cc. of serosanguinous fluid. On the night of August 26 (second postoperative day), there was a temperature spike to 106 F. The pulse rate rose only to 104. Physical examination revealed no basis for this febrile reaction. The patient's respirations were normal. There was some perspiration over the right side of the face. Bilateral thoracenteses obtained insignificant amounts of serosanguinous fluid. This date marked the peak of the summer heat wave in New York City. It was noted that this patient's room, because of its location, was unusually hot and poorly ventilated. The patient was moved to another room and placed in a cold oxygen tent. Ice bags were applied to the extremities. The temperature promptly returned to 99 to 100 F. In addition, penicillin therapy was begun, since an infectious process could not definitely be ruled out at this time. When the oxygen tent

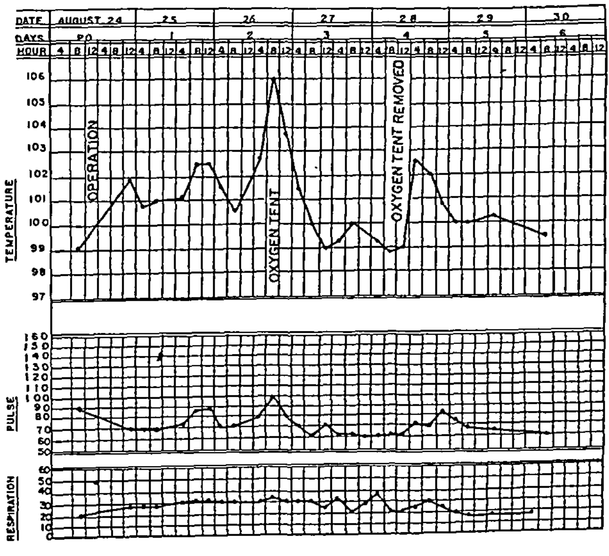

Fig. 2 (case 2).—Graphic temperature, pulse rate and respiration chart.

was removed thirty-six hours later (fourth postoperative day), the temperature again rose sharply to 102 F. However, this was easily controlled by electric fans and wet applications to the body. The patient felt well, became ambulatory and remained afebrile. Her resting blood pressure was 130 systolic and 78 diastolic. She was discharged on the eighth postoperative day with instructions to avoid intense heat.

*Comment.*—Although interpretation of this case is complicated by the recent operation, it seems clear that the acute hyperpyrexia was caused by the intense heat of the environment rather than any operative complication. The prompt response to reduction of the environmental temperature as well as the recrudescence, which followed removal of the cold oxygen tent, lend support to this view.

## COMMENT

A normal human being reacts to a hot environment in several ways: At first the cutaneous blood vessels dilate and divert a greater proportion of the circulating blood to the body surface for cooling by radiation and convection.[2] However, as the room temperature approaches and exceeds normal body temperature (98.6 F.), it becomes obvious that the body cannot dissipate its excess heat by radiation and convection alone. In the normal organism exposed to environmental temperatures above 95 F., evaporation accounts for all or almost all of the heat lost from the body.[3]

Sweat gland secretions provide most but not all of the fluid for the process of evaporation. There is also an "insensible" loss by evaporation from the skin of approximately 800 cc. a day of fluid escaping from the cutaneous capillaries by transudation.[4] Further "insensible" evaporation of water occurs in the lungs (about 400 cc. a day). The reason for our emphasizing these facts is that the sweat gland secretions are abolished by section of the sympathetic nerves to the areas involved, and, although "insensible" evaporation persists, this cannot be sufficiently increased to be of service in dissipating excessive body heat.

The usual sequence of events in cases of prolonged exposure to heat is profuse sweating, dehydration, thirst, diminished venous return, peripheral vascular collapse and syncope. This is usually termed "heat exhaustion."[5] If the patient attempts to satisfy his thirst by drinking huge draughts of water, then dehydration and hemoconcentration give way to severe hypochloremia, and the syndrome of "heat cramps" or "miner's cramps" results.[6] Neither of these syndromes is usually dangerous, and both respond fairly rapidly to rest in a cooler environment combined with saline therapy. Usually these symptoms serve as warning signals and result in removal of the patient from the hot environment before serious damage to the heat-regulating mechanism can occur. Therefore, their temperatures rarely rise above 102 F.

On the other hand, when prolonged exposure, unusual severity of heat or predisposing disease is present, hyperpyrexia or "heat stroke" may supervene. This is usually a serious condition manifested by a failure of the sweating mechanism, a temperature rise to 104 F. or higher and, in terminal cases, coma. It is in some cases preceded by symptoms of heat exhaustion, but is invariably preceded by complete cessation of sweating.[6] This syndrome is probably due to impairment of the heat-regulating centers of the central nervous system.

The 2 patients described in this report had been subjected to almost complete ablation of the sympathetic nervous system for essential hypertension. Consequently, there was almost complete elimination of the sweating mechanism. This, coupled with the elevation of the environmental temperature to a peak of 99 to 101 F. easily explains the failure of heat dissipation in these patients (table).

What is more difficult to understand is the relative infrequency of this complication in thoracolumbar sympathectomy. Although this operation has been performed on over 500 patients (by J. W. H.), only 1 instance of hyperpyrexia, in addition to the cases described herein, has come to our attention. This patient, who was in her third postoperative month, responded well at home to treatment by the family physician. It should be noted that all 3 cases of hyperpyrexia occurred relatively early in the postoperative course. There have been few long range follow-up studies of the sweating mechanism in patients subjected to sympathectomy of this type.

However, Ray and Console[7] have demonstrated that in the course of a "readjustment period" of about three months, several areas, especially in the dermatomes supplied by the twelfth thoracic to the third lumbar ganglions, show unmistakable evidence of sympathetic innervation even after total paravertebral sympathectomy. These authors produce evidence which indicates that this sympathetic activity which returns via "residual" pathways may be interrupted by anterior rhizotomy (twelfth thoracic to second lumbar). These "residual" areas of sympathetic innervation have been observed to increase slightly over a period of one to two years, and in some cases to involve both thighs and buttocks.[7] Our own clinical observations confirm the existence of these "skip" areas. They are occasionally detected even after total sympathectomy by the presence of active sweating over the anterior surface of the thighs.

The late return of the sweating mechanism following extensive (first thoracic to second lumbar) sympathectomy has been studied by Schafer[8] by means of the starch-iodine test in 1 patient who was suffering from polycythemia vera. Five months after operation some amount of sweating had returned to the skin over the anterolateral surface of both thighs. After twenty-three months sweating was noted over the entire anterior and lateral surfaces of both thighs, the suprapubic region and the radial aspect of the left forearm, as well as over a few patches of skin in the region of the left third rib anteriorly. After a thirty-nine month postoperative period, the area of sweating had extended to include both knees anteriorly, the sacroiliac region, the left scapula and a few patches over the right arm.

*Maximum Daily Temperatures in Metropolitan New York*

| Date, 1948 | Temperature, F. |
|---|---|
| August 25 | 91 |
| August 26 | 101 |
| August 27 | 99 |
| August 28 | 99 |
| August 29 | 93 |
| August 30 | 87 |
| August 31 | 79 |

From these studies,[9] it is possible to formulate an explanation for the apparently infrequent occurrence of hyperpyrexia after extensive paravertebral sympathectomy. Perhaps, once the "readjustment period" is passed, the return of the thermoregulatory sweating mechanism to these limited residual areas may be sufficient to maintain thermal homeostasis even when the temperature of the environment rises slightly above that of the body. Nevertheless, early in the postoperative period precautions should be taken to protect these patients from exposure to unusually high environmental temperatures.

## SUMMARY AND CONCLUSIONS

Two cases are reported of hyperpyrexia due to excessive environmental heat in patients who had undergone extensive thoracolumbar sympathectomy. Abolition of most of the sweating mechanism renders these patients unusually susceptible to high environmental temperatures especially during the early postoperative period.

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[2] Machle, W., and Hatch, T. F.: Heat: Man's Exchanges and Physiological Responses, Physiol. Rev. **27**: *200-224 (April) 1947.*

[3] Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, ed. 4, Baltimore, Williams & Wilkins Company, 1945; p. 624.

[4] Dill, D. B.: Life, Heat, and Altitudes: Physiological Effects of Hot Climates and Great Heights, Cambridge, Mass., Harvard University Press, 1938.

[5] Talbott, J. H.; Dill, D. B.; Edwards, H. T.; Stumme, E. H., and Consolazio, W. V.: Ill Effects of Heat upon Workmen, J. Indust. Hyg. & Toxicol. **19**: 258-274 (June) 1937.

[6] Ferris, E. B., Jr. Blankenhorn, M. A.; Robinson, H. W., and Cullen, G. E.: Heat Stroke: Clinical and Chemical Observations on Forty-Four Cases, J. Clin. Investigation **17**: *249-262 (May) 1938.*

[7] Ray, B. S., and Console, A. D.: Residual Sympathetic Pathways After Paravertebral Sympathectomy, J. Neurosurg. **5**: 23-49 (Jan.) 1948.

[8] Schafer, P. W.: The Etiology and Treatment of Polycythemia Rubra Vera, Ann. Surg. **122**: 1098-1124 (Dec.) 1945.

[9] Ray and Console.[7] Schafer.[8]

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SATURDAY, JULY 9, 1949

## THE RELATIONSHIP OF TRYPTOPHANE AND NICOTINIC ACID

The name of Dr. Joseph Goldberger inevitably comes to mind in any discussion of the causation, prevention and cure of pellagra. He pioneered in the attempts to associate the appearance of the disease with causative nutritional factors; as he continued his studies he repeatedly showed the parallelism between presence or absence of pellagra and differences in the diet of the persons under examination. Particularly was the consumption of proteins of recognized superior biologic value regularly associated with the absence of the disease. In 1937 Elvehjem and his co-workers[1] demonstrated that nicotinic acid prevented and cured the canine analogue of human pellagra, and its efficacy in treating pellagra in man was promptly demonstrated.[2] The earlier suggestion that protein of high nutritional value exerted a favorable effect on human pellagra and the discovery of the curative properties of nicotinic acid were partially harmonized by the observation that, in the rat, growth is retarded if corn grits are added to an experimental diet low in nicotinic acid and that either nicotinic acid or tryptophane brings about resumption of growth.[3]

The foregoing observations suggest a more or less close relationship between protein and nicotinic acid in nutrition; indeed, hydrolyzed fibrin and gelatin both act like corn grits in retarding growth and glycine, and a mixture of amino acids simulating completely hydrolyzed casein will also have this effect.[4] The influence of corn grits in the diet has been ameliorated by use of dextrose or dextrin as a source of carbohydrate, which suggests that the metabolism of micro-organisms in the intestine may play a part in the phenomenon.[5] Using the excretion of nicotinic acid and of N-methyl nicotinamide in the urine as a criterion, Rosen and co-workers[6] showed with this criterion that the same relationship exists between tryptophane and nicotinic acid. Later it was shown that human beings behave like laboratory animals with respect to a diminished output of the metabolites of nicotinic acid when a deficiency of nicotinic acid exists and its correction with tryptophane.[7] On this basis, an amino acid imbalance produced by the administration of phenylalanine or threonine to rats gave evidence of interference with nicotinic acid–tryptophane metabolism, and the intravenous route was as effective as the oral.[8]

The rat is ordinarily able to synthesize enough nicotinic acid to maintain its physiologic well-being; however, when corn grits are added to a ration poor in nicotinic acid, the coenzyme content of liver, voluntary muscle and brain is decreased.[9] The vital part played by these enzymes in tissue oxidation suggests the gravity of the situation in which a widely used food can, through an amino acid imbalance from its protein of modest biologic value, cause this deep-seated alteration of usual physiologic chemical reactions. Further investigation of the interrelations of the known causative factors in the production of nicotinic acid deficiency is warranted by the considerable importance of the problem in the public health program.

## STREPTOMYCIN THERAPY IN PULMONARY TUBERCULOSIS

Riggins and Hinshaw[1] have summarized the results of the use of streptomycin in 332 patients with pulmonary tuberculosis; patients were treated by cooperative investigators designated by the executive committee of the American Trudeau Society. A statistical analysis was made on those who had been observed for at least ninety days after initiation of treatment. Types differing as to nature of disease, age, race and sex were treated in widely separated sections of the country. Of the 332 patients with pulmonary tuberculosis, 17 had minimal, 118 moderately advanced and 197 far advanced disease; 80 per cent had predominantly acute or subacute disease, and the remainder predominantly chronic disease at the beginning of the treatment.

The beneficial effect of streptomycin in tuberculosis, the report indicates, depends on its interference with the growth and multiplication of streptomycin-sensitive strains of Mycobacterium tuberculosis. Streptomycin apparently does not directly enhance repair to tissue, but it probably does favorably influence the tempo and quality of repair by inhibiting the growth and multiplication of tubercle bacilli. The response of the tuberculous lesion to streptomycin is apparently fundamentally related to the characteristics of the pathologic condition and the patient's ability to cope with the disease. Previous workers have demonstrated, both experimentally and clinically, that streptomycin is more effective against relatively early acute and subacute lesions, in which the extent and degree of caseation is limited, than it is against confluent and rapidly caseating and liquefying tuberculous pneumonias or against extensive chronic fibrocaseous and cavernous disease. These fundamental factors are more decisive in the degree of therapeutic effectiveness of streptomycin and the outcome of the issue than are the often overemphasized differences in total daily dosage or duration of treatment. The partial, even though temporary, control of the more active pulmonary and bronchial disease is often sufficient to permit relatively safe and effective operation. Streptomycin usually has little or no decisive therapeutic value when used alone in chronic types of cavernous disease without recent or exudative components, or in the absence of tuberculous laryngitis, tracheobronchitis or enteritis.

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[1] Elvehjem, C. A.; Madden, R. J.; Strong, T. M., and Woolley, D. W.: J. Am. Chem. Soc. **59:** 1767, 1937.

[2] Fouts, P. J.; Helmer, O. M.; Lepkowsky, S., and Jukes, T. H.: Proc. Soc. Exper. Biol. & Med. **37:** 405, 1937. Smith, D. T.; Ruffin, J. M., and Smith, S. G.: Pellagra Successfully Treated with Nicotinic Acid, J. A. M. A. **109:** 2054-2055 (Dec. 18) 1937.

[3] Krehl, W. A.; Tepley, L. J., and Elvehjem, C. A.: Science **101:** 283, 1945. Krehl, W. A.; Tepley, L. J.; Sarma, P. S., and Elvehjem, C. A.: Science **101:** 489, 1945.

[4] Krehl, W. A.; Sarma, P. S., and Elvehjem, C. A.: J. Biol. Chem. **162:** 403, 1946. Henderson, L. M.; Deodhar, T.; Krehl, W. A., and Elvehjem, C. A.: ibid. **170:** 261, 1947.

[5] Krehl, W. A.; Sarma, P. S.; Tepley, L. J., and Elvehjem, C. A.: J. Nutrition **31:** 85, 1946.

[6] Rosen, F.; Huff, J. W., and Perlzweig, W. A.: J. Biol. Chem. **163:** 343, 1946.

[7] Sarrett, H. P., and Goldsmith, G. A.: J. Biol. Chem., **167:** 293, 1947; ibid. **177:** 461, 1949. Perlzweig, W. A.; Rosen, F.; Levitas, N., and Robinson, J.: ibid. **167:** 511, 1947.

[8] Hankes, L. V.; Henderson, L. M.; Brickson, W. L., and Elvehjem, C. A.: J. Biol. Chem. **174:** 873, 1948.

[9] Singal, S. A.; Syndenstricker, V. P., and Littlejohn, J. M.: J. Biol. Chem. **176:** 1069, 1948.

[1] Riggins, H. M., and Hinshaw, H. C.: Streptomycin-Tuberculosis Research Project of the American Trudeau Society: A Summary Report. Am. Rev. Tuberc. **59:** 140-167 (Feb.) 1949.

When it is given in relatively large daily dosage for prolonged periods, the toxic effects of streptomycin prove to be second only in importance to the emergence of drug-fast organisms as a limiting factor in the usefulness of the drug. When streptomycin was administered intramuscularly in 2 to 3 Gm. daily doses, disturbing and often severe toxic manifestations were frequent, the most serious being deafness and loss of labyrinthine function. Serious toxic manifestations can be largely avoided if attention is paid to the selection of the proper dosage schedule, which is best calculated on a milligram per kilogram of body weight basis. Toxic effects of any consequence are rarely encountered in patients receiving daily dosage of 20 mg. per kilogram of body weight. A daily dosage of 30 to 40 mg. per kilogram of body weight exerts a greater therapeutic effect, at least in certain types of disease. It was hoped that dihydrostreptomycin would be of lower toxicity than streptomycin, but recent data indicate that this may not be the case. Further investigation of this derivative is necessary before widespread use can be recommended.

Although improvement occurred much more frequently and was more definite in patients with predominantly acute disease than in those with the predominantly chronic disease, significant improvement was reported by most of the investigators in a small percentage of patients with chronic disease. As the progression of chronic tuberculosis is fundamentally related to the occurrence of acute episodes, the great potentialities of the strategic use of short courses of streptomycin to combat such episodes should be stressed. The occurrence of drug-fast organisms was definitely related to duration of treatment. Organisms resistant to 10 or more micrograms of streptomycin per cubic centimeter rarely occurred in patients treated for one month, but appeared frequently in patients treated for two months or more. Drug fastness is a significant factor in limiting the effectiveness of the antibiotic. The failure to close cavities and convert sputum in a large percentage of patients and the relapse of the disease with increasing frequency with passage of time suggest the limitations of antibacterial therapy in this disease. Collapse therapy is absolutely necessary in some cases for achieving lasting results.

## DERMATOME PATTERNS IN THE EXTREMITIES

J. J. Keegan and F. D. Garrett[1] have recently reported new and highly significant information on segmental distribution of cutaneous nerves in the extremities. New patterns were derived by study of single nerve compressions in herniations of intervertebral disks. In this study 165 cases of hypalgesia of the upper limb and 1,264 cases of hypalgesia of the lower limb are described. Forty-seven of the lesions in the upper extremity and 707 of those in the lower were verified by surgery. Previous original studies by Keegan[2] are reported, and comparisons are made with dermatome charts developed by Sherrington, Bolk, Head and Foerster. The new charts differ significantly from those constructed by previous investigators in that a regular pattern of serial dermatomes in the limbs extending as continuous patterns from the dorsal midline of the body down the arms and legs are described. Nerve distribution patterns of the second, third, fourth and fifth cervical nerves, the first thoracic, the second, third, fourth and fifth lumbar and the first, second and third sacral are described in detail. Areas were mapped by determination of pain hypalgesia to pin prick and pin scratch. Heat and cold sensation areas were not mapped, as it was believed that finer demarcation and less apparent overlapping occurred in pain sensation. Sherrington's results were obtained by isolating single nerve roots in the Macacus rhesus monkey; Bolk's data were determined by careful gross dissection of a single human body; Head's data were largely drawn from the distribution of skin lesions from herpes zoster involving a single nerve root, and Foerster's data were obtained, as with Sherrington, by

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[1] Keegan, J. J., and Garrett, F. D.: The Segmental Distribution of the Cutaneous Nerves in the Limbs of Man, Anat. Rec. **102**: 409-437 (Dec.) 1948.

[2] Keegan, J. J.: Dermatome Hypalgesia with Postero-Lateral Herniation of Lower Cervical Intervertebral Disc, J. Neurosurg. **4**: 115-139, 1947; Diagnosis of Herniation of Lumbar Intervertebral Disks by Neurologic Signs, J. A. M. A. **126**: 868-873 (Dec. 2) 1944; Neurosurgical Interpretation of Dermatome Hypalgesia with Herniation of the Lumbar Intervertebral Disc, J. Bone & Joint Surg. **26**: 238-248 (April) 1944; Dermatome Hypalgesia Associated with Herniation of Intervertebral Disk, Arch. Neurol. & Psychiat. **50**: 67-83 (July) 1943.

isolation of a single nerve root plus faradic stimulation of the root and the plotting of resultant areas of vasodilatation.

The newly defined dermatome areas of hyposensitivity are interpreted as primitive dermatomes. The study demonstrates that the amount of overlap in single nerve sensation patterns is much less than previously believed. Foerster had stated previously that the amount of overlap of single nerve dermatomes was so considerable that division of a single nerve root did not produce loss of sensibility. Additionally, the study indicated that postulation of a loop configuration of the dermatomes, as suggested by Sherrington, are probably untenable. New information provided by these studies offers considerable aid to accurate diagnoses of single nerve root lesions of the cervical and lumbar portions of the spine.

A subjective mechanism of study, dependent on pain cognition in persons with known variability in pain thresholds, was used throughout. Nevertheless, results of the study have apparently clarified much previous confusion regarding sensory nerve distribution of the extremities.

## Current Comment

### CONTROL OF MURINE TYPHUS WITH DDT

In the United States, murine typhus, according to Assistant Surgeon General C. L. Williams,[1] constitutes an important problem in nine states grouped in the Southeast. These states are: North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Louisiana and Texas. Ninety-two per cent of the human cases of murine typhus in the United States are reported in these nine states. Despite the rat destruction and rat-proofing programs a steady rapid increase has taken place, moving from 1,882 cases in 1940 to 5,401 in 1944. In 1944, personnel of the United States Public Health Service carried out experiments on the control of rodent ectoparasites, using DDT mixed with an inert powder to dust rat runs in buildings. Results indicated that flea indexes in buildings could be reduced by as much as 90 per cent and could be kept at a low level for about three months. A flea control project was begun in 1945, federal funds for that purpose being made available. The program was carried on by state health departments according to a uniform pattern established in agreement with the Public Health Service. As the result of this campaign there was a progressive reduction in the incidence of the disease. In 1944 there were 5,401 cases of murine typhus reported in the United States. In 1945 there were 5,193, in 1946 there were 3,365 and in 1947 the number was 2,034, which represents an over-all decline of about 62 per cent. The steady decline has continued into 1948, present data indicating that there will be reported between 1,100 and 1,200 cases. The material used is a dust mixture of 10 per cent DDT to 90 per cent pyrophyllite. This dust is spread along rat runs, in burrows and, so far as practicable, into rat harborages. The theory of operation is not to dust the rats themselves but to kill the fleas when they drop off the rats. Apparently rats carry the dust in which they have walked to their nests where additional fleas are killed. Through this method, two main types of rat fleas (X. cheopis and L. segnis) have been greatly reduced in numbers. In addition to the reduction in rat fleas, incidence in rats of a positive complement fixation reaction for typhus also decreased. The author believes that DDT dusting is superior to any other method now in use for the rapid control of any disease carried solely or principally by rat fleas.

### ALTERATION THERAPY IN PULMONARY TUBERCULOSIS

The Japanese investigators Susumu Nukada and Chieko Ryu[1] report interesting animal experiments in tuberculosis using heterospecific vaccines. Vaccines made from bacteria including gonococci, dysentery bacilli, streptococci and typhoid bacilli were given to rabbits and guinea pigs with experimental tuberculous infection. Vaccination was also performed prior to the induction of experimental tuberculosis. Control animals were observed and compared in each instance. Control vaccine made from Eberthella typhosa and Neisseria gonorrhoeae and the mixed autolysate of these bacteria protected animals from a rapid advance of preexisting or subsequently induced tuberculosis. A mixed autolysate was prepared by separately suspending each strain of bacteria in sterile distilled water, killing by heating to 53 C. for one hour, and incubation for ten days followed by centrifugation at 10,000 revolutions per minute. The clear autolysate obtained was rendered isotonic with sodium chloride, and carbolic acid added. Autolysates of E. typhosa and N. gonorrhoeae were mixed in the proportion of 1 to 3. Vaccination with a mixture of typhoid and gonococcus vaccine increased resistance against tuberculous infection of both guinea pigs and rabbits. These treated animals showed significant increase of life span as compared with untreated control animals. Average survival time of tuberculous animals vaccinated with the autolysate was 23.2 days, and life span of those inoculated with the vaccine, 19 days. Control animals died in an average of 14.4 days. Nine hundred and thirty-two patients with pulmonary tuberculosis were then treated with the mixed autolysate during the five year period (1940 to 1945). Of 703 patients with incipient and mild forms of tuberculosis, 550 were stated to have recovered completely and 151 were improved. Of 229 moderately and severely ill patients, 107 improved and 72 recovered. The treatment results observed are described as being due to a "heterospecific increase of resistance." The methods and results reported are interesting. However, the excellent results now obtained with streptomycin therapy far overshadow vaccine treatment reported, especially in advanced stages of human tuberculosis.

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[1] Williams, C. L.: The Control of Murine Typhus with DDT, Mil. Surgeon **104**: 163-167 (March) 1949.

[1] Nukada, S., and Ryu, C.: Heter-Specific Alteration Therapy for Pulmonary Tuberculosis, Jap. M. J. **1**: 181 (June) 1948.

# ORGANIZATION SECTION

# PROCEEDINGS of the ATLANTIC CITY SESSION

## MINUTES OF THE SCIENTIFIC SECTIONS

### SECTION ON INTERNAL MEDICINE

WEDNESDAY MORNING, JUNE 8, 1949

The meeting was called to order at 9:05 a. m. by the chairman, Dr. M. A. Blankenhorn, Cincinnati.

The first paper, "The Diagnostic Value of Cardiac Auscultation," by Dr. Samuel A. Levine of Boston, was discussed by Dr. Howard B. Sprague of Boston.

"Neurocirculatory Asthenia (Anxiety Neurosis, Effort Syndrome): A Twenty-Year Follow-Up Study of 173 Patients," by Drs. E. O. Wheeler, P. D. White, E. W. Reed and M. E. Cohen of Boston, was read by Dr. Wheeler and discussed by Drs. Arthur M. Master, New York; Hobart A. Reimann, Philadelphia, and Weldon J. Walker, Canal Zone, and Dr. Wheeler.

"The Role of Coronary Vasodilating Drugs in Coronary Occlusion," by Drs. N. C. Gilbert, G. K. Fenn and L. A. Nalefski, Chicago, was presented by Dr. Nalefski and discussed by Drs. Roy W. Scott, Cleveland, and W. M. Fowler, Iowa City, and Dr. Nalefski.

"The Frank Billings Lecture: Osler and the American Medical Association," was presented by Dr. Reginald Fitz of Boston.

"Bacteremia Following Tooth Extraction: Prevention With Penicillin and a New Solfonamide, Gantrosan," by Drs. Paul S. Rhoads and Warren R. Schram, Chicago, was read by Dr. Rhoads and discussed by Drs. Robert J. Glaser, St. Louis, and Harry F. Dowling, Washington, D. C., and Dr. Rhoads.

"Diagnostic Problems of Prolonged Fever," by Dr. Hobart A. Reimann, Philadelphia, was discussed by Drs. Wesley W. Spink, Minneapolis, and Harold Jeghers, Washington, D. C.

THURSDAY, JUNE 9—MORNING

Election of officers was held, with the following results: chairman, Arthur Bloomfield, San Francisco; vice chairman, Ralph Kinsella, St. Louis; secretary, W. L. Palmer, Chicago; representative to House of Delegates, C. T. Stone, Galeston, Texas; alternate, W. D. Stroud, Philadelphia; executive committee, Cecil J. Watson, Minneapolis; M. A. Blankenhorn, Cincinnati, and Arthur Bloomfield, San Francisco.

"Critique of Reports of the Surgical and Dietary Therapy in Hypertension," by Dr. David Ayman, Boston, was discussed by Drs. Frederick M. Allen, New York, and Keith S. Grimson, Durham, N. C., and Dr. Ayman.

"Hazards in the Use of Low Salt Diets," by Dr. Henry A. Schroeder, St. Louis, was discussed by Dr. J. Edwin Wood Jr., Charlottesville, Va., and Dr. Schroeder.

"Deficiency Diseases in a General Hospital; A Ten-Year Study," the chairman's address, was presented by Dr. M. A. Blankenhorn, Cincinnati.

"The Prepsychotic and Early Psychotic Sees the Family Doctor or Internist First," by Drs. G. Gill Richards and Louis G. Moench, Salt Lake City, was read by Dr. Moench and discussed by Dr. Herbert F. Robb, Belleville, Mich., with closing discussion by Dr. Moench.

"Other Factors Besides Allergy in Asthma," by Dr. Francis M. Rackemann, Boston, was discussed by Drs. Simon S. Leopold, Philadelphia, and George Piness, Los Angeles, and Dr. Rackemann.

"The Use of Radioactive Isotopes in Clinical Medicine," by Dr. John Z. Bowers, Washington, D. C., was discussed by Dr. Paul C. Aebersold, Oak Ridge, Tenn., with closing discussion by Dr. Bowers.

*Joint Session*

FRIDAY, JUNE 10—MORNING

"The General Management of Rheumatoid Arthritis," by Dr. Charles A. Ragan of New York, was discussed by Dr. Hans Waine, Winchester, Mass., and Dr. Ragan.

"The Present Status of Gold Therapy in Rheumatoid Arthritis," by Dr. Richard H. Freyberg, New York, was discussed by Dr. Leslie J. A. Parr, Sydney, Australia, and Dr. Freyberg.

"Prevention and Treatment of Deformities in Rheumatoid Arthritis," by Drs. Donald F. Hill and W. Paul Holbrook, Tucson, Ariz., was discussed by Dr. Robert L. Preston, New York, and Dr. Donald F. Hill.

Dr. Dwight L. Wilbur, chairman of the Section on Experimental Medicine and Therapeutics, which was holding a joint session with the Section on Internal Medicine, assumed the chair for the balance of the session.

"NPH-50 (Modified Protamine) Insulin in the Treatment of Severe Diabetes," was read by Dr. Priscilla White of Boston and discussed by Dr. Cyril M. MacBryde, St. Louis, and Dr. Henry T. Ricketts, Chicago, with closing discussion by Dr. White.

"Treatment of Myasthenia Gravis," by Drs. Charles T. Stone and J. Alfred Rider of Galveston, Texas, was presented by Dr. Stone and discussed by Dr. David Grobe, Baltimore, and Dr. Stone.

"Favorable Results in Bulbar Poliomyelitis Treated as a Problem in Respiratory Obstruction," by Drs. Thomas C. Galloway, Evanston, Ill., and Martin H. Seifert, Wilmette, Ill., was read by Dr. Galloway and discussed by Drs. Albert G. Bowers, Pasadena, Calif.; F. R. Kleaner, Reidville, N. C.; Joseph R. Brown, Minneapolis; Allen Conroy, Chicago, and George J. Boines, Wilmington, Del.; closing discussion by Dr. Seifert.

### SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, JUNE 8—AFTERNOON

The meeting was called to order at 2:05 p. m. by the chairman, Dr. William F. MacFee, New York.

Dr. Claude E. Welch, Boston, read a paper on "Acute Massive Hemorrhage from the Upper Gastrointestinal Tract." Discussed by Drs. John Stewart, Buffalo; Jonathan E. Rhoads, Philadelphia; Otto DeMuth, Vancouver, British Columbia, and Claude E. Welch, Boston.

Dr. Howard K. Gray, Rochester, Minn., read a paper on "Results of Classical Operations for Duodenal Ulcer and Benign Ulcerating Lesions of the Stomach." Discussed by Drs. I. Ridgeway Trimble, Baltimore; Harold D. Harvey, New York; Otto DeMuth, Vancouver, British Columbia, and Howard K. Gray, Rochester, Minn.

Dr. D. Henry Poer, Atlanta, Ga., read a paper on "Changing Concepts in the Use of Colostomy." Discussed by Drs. Claude E. Welch, Boston; Fred W. Rankin, Lexington, Ky., and D. Henry Poer, Atlanta.

Drs. Vinton E. Siler and John H. Wulsin, Cincinnati, presented a paper on "Acute Pancreatitis." Discussed by Drs. Alton Ochsner, New Orleans; Robert Elman, St. Louis, and Vinton E. Siler, Cincinnati.

Major Edwin J. Pulaski, Lieut. James F. Connell and Col. Sam F. Seeley, Medical Corps, United States Army, presented a paper on "Sterilization of the Intestinal Tract by Antibiotics and Supplemental Agents." Discussed by Drs. John S. Lockwood, New York; Edgar J. Poth, Galveston, Texas, and Major Edwin J. Pulaski, Medical Corps, United States Army.

Dr. Amos R. Koontz, Baltimore, read a paper on "Some Common Fallacies and Confusions with Regard to Inguinal Hernia Repair." Discussed by Drs. Guy W. Horsley, Richmond, Va.; Bradley L. Coley, New York; Leigh F. Watson, Los Angeles; Roland I. Grausman, New York, and Amos R. Koontz, Baltimore.

### Thursday, June 9—Afternoon

The following officers were elected: chairman, Dr. Michael DeBakey, Houston; vice chairman, Dr. R. Glen Spurling, Louisville, and secretary, Dr. Ridgeway Trimble, Baltimore.

Dr. William F. MacFee, New York, read the chairman's address, entitled "Painless Jaundice."

Drs. R. Glen Spurling and Ludwig H. Segerberg, Louisville, Ky., presented a paper on "Craniocerebral Trauma." Discussed by Dr. Barnes Woodhall, Durham, N. C.

Dr. Geza de Takats, Chicago, read a paper on "The Present Status of Anticoagulant Therapy in Surgery." Discussed by Drs. Alton Ochsner, New Orleans; Walter F. Kvale, Rochester, Minn.; Norman E. Freeman, San Francisco; Sylvan Moolten, New Brunswick, N. J., and Geza de Takats, Chicago.

Dr. Carl A. Moyer, Dallas, read a paper on "Acute Changes in Renal Function Associated with Major Surgical Procedures." Discussed by Drs. Ernest E. Muirhead, Dallas; Otto DeMuth, Vancouver, British Columbia; Edward McLaughlin, Philadelphia, and Carl A. Moyer, Dallas.

Dr. Francis D. Moore, Boston, read a paper on "Adaptation of Supportive Therapy to the Needs of the Surgical Patient." Discussed by Drs. Carl A. Moyer, Dallas, and Francis D. Moore, Boston.

### Friday, June 10

The Section met jointly with the Section on Anesthesiology.

## SECTION ON OBSTETRICS AND GYNECOLOGY

### Wednesday, June 8—Morning

The meeting was called to order at 9:10 a. m. by the chairman, Dr. Leroy A. Calkins, Kansas City, Kan.

A resolution was adopted endorsing the Congress of Obstetrics and Gynecology to be held in New York, May 14-19, 1950, and urging support by individual members becoming members of the American Committee on Maternal Welfare.

Dr. Joseph J. Bunim, New York, read a paper on "Rheumatic Heart Disease in Pregnancy." Discussed by Drs. Julius Jensen, St. Louis; Burton E. Hamilton, Boston; Nicholson J. Eastman, Baltimore, and Joseph J. Bunim, New York.

Dr. Duncan E. Reid, Boston, read a paper on "Evaluation of Present Day Trends Pertaining to Personality and Psychologic Aspects of Pregnancy." Discussed by Drs. Sprague H. Gardiner, Indianapolis; Gordon R. Kamman, St. Paul, and Duncan E. Reid, Boston.

Drs. John R. McCain and Samuel R. Poliakoff, Atlanta, Ga., presented a paper on "The Conservative Treatment of Premature Separation of the Normally Implanted Placenta." Discussed by Drs. M. Pierce Rucker, Richmond, Va.; C. O. McCormick, Indianapolis; Edward G. Waters, Jersey City, N. J.; J. P. Greenhill, Chicago, and John R. McCain, Atlanta.

Drs. Lois A. Day and Philip L. Smith, Rochester, Minn., presented a paper on "The Reproductive Careers of Women Who Have Menstrual Dysfunctions." Discussed by Drs. Jean Paul Pratt, Detroit; S. Leon Israel, Philadelphia, and Lois A. Day, Rochester, Minn.

Dr. G. E. Seegar Jones, Baltimore, read a paper on "Newer Methods in the Management of Infertility." Discussed by Drs. J. P. Greenhill, Chicago; John Rock, Brookline, Mass.; Sophia Kleegman, New York; Abraham E. Rakoff, Philadelphia; Karl Karnaky, Houston, Texas, and G. E. Seegar Jones, Baltimore.

Drs. M. Edward Davis and Nicholas W. Fugo, presented a paper on "Steroid Therapy in Early Pregnancy Complications." Discussed by Drs. Olive W. Smith, Brookline, Mass.; A. E. Rakoff, Philadelphia; A. R. Abarbanel, Los Angeles; Karl Karnaky, Houston, Texas, and M. Edward Davis, Chicago.

### Thursday, June 9—Morning

The following officers were elected: chairman, Dr. James R. Bloss, Huntington, W. Va.; vice chairman, Dr. Bernard J. Hanley, Los Angeles; secretary, Dr. Arthur B. Hunt, Rochester, Minn.; delegate, Dr. Harvey B. Matthews, Brooklyn, N. Y.; alternate, Dr. Daniel Morton, San Francisco; member of Board of Governors of American College of Surgeons, Dr. Emil Novak, Baltimore; members of American Committee on Maternal Welfare, Drs. Benbrow Thompson, Los Angeles; Robert D. Mussey Sr., Rochester, Minn., and Oren Moore, Charlotte, N. C.; representative to Scientific Committee to American Medical Association, Dr. F. H. Falls, Chicago; representative to National Federation of Obstetrics-Gynecological Societies, Dr. Ralph E. Campbell, Madison, Wis.

Dr. Leroy A. Calkins, Kansas City, Kan., read the chairman's address, entitled "Reproduction in the Older Woman."

Dr. H. Robert Berman, Newark, N. J., read a paper on "A New Simplified Classification of the Pelvis." Discussed by Drs. Paul C. Swenson, Philadelphia, and H. Robert Berman, Newark, N. J.

Dr. Paula Marie Horn, Los Angeles, read a paper on "Pregnancy Complicated by Anterior Poliomyelitis." Discussed by Drs. Leon S. McGoogan, Omaha; A. G. Bower, Pasadena, Calif.; Harry M. Kirschbaum, Detroit; Frederick H. Falls, Chicago, and Paula Marie Horn, Los Angeles.

Drs. Clifford B. Lull and Robert M. Mitchell, Philadelphia, presented a paper on "The Pomeroy Operation for Sterilization." Discussed by Drs. William F. Nelms, Brooklyn; G. Wilson Hunter, Fargo, N. D., and Clifford B. Lull, Philadelphia.

Drs. E. Stewart Taylor, James R. Phalen and Harold L. Dyer, Denver, presented a paper on "The Effect of Obstetric Difficulties and Maternal Diseases on Premature Mortality."

Drs. William H. Masters and Robert W. Ross, St. Louis, presented a paper on "The Protection of Premature Infants Provided by the Various Methods of Conduction Anesthesia."

The two aforementioned papers were discussed by Drs. Franklin F. Snyder, Cambridge, Mass.; James K. Quigley, Rochester, N. Y.; Robert A. Hingson, Baltimore; Harry M. Kirschbaum, Detroit; Carl H. Tafeen, Brooklyn; E. Stewart Taylor, Denver, and William H. Masters, St. Louis.

### Friday, June 10—Morning

Drs. William C. Keettel and Everett D. Plass, Iowa City, presented a paper on "A Study of Prophylactic Penicillin Administration to Obstetric Patients." Discussed by Drs. E. Stewart Taylor, Denver; Louis H. Douglass, Baltimore, and William C. Keettel, Iowa City.

Drs. Roy W. Mohler and George A. Hahn, Philadelphia, presented a paper on "The Normal Cervix Uteri and Its Clinical Significance." Discussed by Drs. Wesley T. Pommerenke, Rochester, N. Y., and Roy W. Mohler, Philadelphia.

Drs. H. E. Nieburgs and Edgar R. Pund, Augusta, Ga., presented a paper on "Evaluation of Comparative Exfoliative Cytology for the Detection of Cancer of the Cervix Uteri." Discussed by Drs. Willis E. Brown, Iowa City; Emil Novak, Baltimore, and Martin W. Diethelm, Toledo.

Drs. Lester D. Odell and James C. Burt, Chicago, presented a paper on "A New Diagnostic Adjunct for Uterine Cancer." Discussed by J. Thorton Wallace, Brooklyn; M. Edward Davis, Chicago; James Burt, Chicago, and Herbert E. Schmitz, Chicago.

Drs. Eleanor S. Percival and A. D. Campbell, Montreal, Quebec, Canada, presented a paper on "The Status of Radium Therapy in the Carcinoma of the Cervix." Discussed by Drs. Howard C. Taylor Jr., New York; Herbert E. Schmitz, Chicago; Harry M. Kirschbaum, Detroit, and Eleanor S. Percival, Montreal.

Dr. John C. Hirst, Philadelphia, read a paper on "Carcinoma of the Cervix Complicating Pregnancy." Discussed by Drs. W. O. Johnson, Louisville; Joseph Kelso, Oklahoma City, and John C. Hirst, Philadelphia.

The symposium was followed by a question and answer period.

The meeting adjourned at 12:40 p. m.

## SECTION ON OPHTHALMOLOGY

### WEDNESDAY, JUNE 8—AFTERNOON

The meeting was called to order at 2 p. m. by the chairman, Dr. M. Hayward Post, St. Louis.

Dr. M. Hayward Post, St. Louis, read the chairman's address, entitled "The Function of the Eye Section of the American Medical Association."

Col. William Stone, Washington, D. C., in introducing a symposium on ocular injuries, presented a paper on "Eye Injuries in the Armed Forces."

Dr. W. Morton Grant, Boston, read a paper on "Chemical Burns of the Eye."

Dr. David G. Cogan, Boston, presented a paper on "Lesions of the Eye from Radiant Energy."

Dr. Brittain F. Payne, New York, read a paper on "Ocular Contusions in National Emergencies."

Dr. Don Marshall, Kalamazoo, Mich., presented a paper on "Lacerations and Perforations."

Dr. Alston Callahan, Birmingham, Ala., read a paper on "Intraocular Foreign Bodies."

Dr. Derrick Vail, Chicago, presented a summary of the symposium.

A question and answer period followed.

The paper on "Lacerations and Perforations," by Dr. Don Marshall, Kalamazoo, Mich., was discussed by Drs. I. S. Tassman, Philadelphia, and Don Marshall, Kalamazoo, Mich.

The paper on "Intraocular Foreign Bodies," by Dr. Alston Callahan, Birmingham, Ala., was discussed by Drs. J. S. Shipman, Philadelphia, and Alston Callahan, Birmingham, Ala.

A question submitted by Dr. Aryeh Feigenbaum, Jerusalem, was answered by Dr. Derrick Vail, Chicago.

### THURSDAY, JUNE 9—AFTERNOON

Dr. Conrad Berens, New York, was awarded the medal of the Section, the presentation being made by the chairman, Dr. M. Hayward Post, St. Louis.

Dr. Derrick Vail, Chicago, delivered to the chairman a gavel block, presented as a gift to the Section by Mrs. John E. Weeks.

On motion of Dr. Derrick Vail, Chicago, seconded by Dr. Arthur J. Bedell, Albany, N. Y., a rising vote of thanks was extended to Mrs. Weeks.

Dr. William L. Benedict, Rochester, Minn., presented the report of the Advisory Committee to the Eye Health Committee of the Student Health Association, which was accepted on motion of Dr. Arthur J. Bedell, Albany, N. Y.

Dr. William L. Benedict, Rochester, Minn., gave his report as the Section's delegate to the House of Delegates, which was accepted.

Dr. Thomas D. Allen, Chicago, reported for the American Committee on Optics and Visual Physiology. It was voted, on motion of Dr. Arthur J. Bedell, Albany, N. Y., seconded by Dr. Conrad Berens, New York, that the report be accepted and that the committee be thanked and continued.

Dr. Burton Chance reported that the Committee for Award of Knapp Medal for 1947 deemed none of the 1947 papers worthy of the award. This report was accepted.

Dr. Arnold Knapp, New York, submitted his report for the Committee for Award of Knapp Medal for 1948, and also recommended that no award be made. On motion of Dr. Conrad Berens, New York, it was voted that the report be accepted.

In the absence of Dr. John H. Dunnington, New York, his report for the Committee on American Board of Ophthalmology was read by the secretary. On motion of Dr. Conrad Berens, New York, it was accepted.

The chairman read Dr. Jonas S. Friedenwald's report for the Committee on National Museum of Ophthalmic Pathology. On motion of Dr. Conrad Berens, New York, it was accepted.

The report of the Committee on Museum of Ophthalmic History was given by Dr. Burton Chance, and on motion of Dr. Conrad Berens, New York, it was accepted.

Dr. Lawrence T. Post, St. Louis, gave the report of the Committee on American Orthoptic Council. On motion of Dr. Conrad Berens, New York, this report and the recommendations contained therein were accepted.

Dr. J. N. Greear, Washington, D. C., gave the report of Representatives from the Section to the Board of Governors of the American College of Surgeons, which was accepted.

In the absence of Dr. Albert D. Ruedemann, his report on Representatives from the Section to the Joint Committee of Industrial Ophthalmology was read by Dr. M. Hayward Post, St. Louis. On motion of Dr. Conrad Berens, it was voted to accept the report.

The report of the Knapp Testimonial Fund was given by Dr. Parker Heath, Boston. On motion of Dr. Lawrence T. Post, St. Louis, the report was accepted.

Dr. Derrick Vail, Chicago, reported for the Committee on Public Relations and stated that the committee wished to be discontinued. On motion of Dr. Arthur J. Bedell, Albany, N. Y., seconded by Dr. Conrad Berens, New York, it was voted to accept the report and discharge the committee.

Dr. Trygve Gundersen, Boston, read the report on the Howe Fund. On motion of Dr. Conrad Berens, New York, it was voted to accept the report.

Dr. Conrad Berens, New York, gave the report of the Committee on Nomenclature. On motion of Dr. Lawrence T. Post, St. Louis, this report was accepted.

Dr. Georgiana D. Theobald, Oak Park, Ill., presented the report of the Committee on Scientific Exhibit, which was accepted.

Dr. Derrick Vail, Chicago, presented the report of the Executive Committee. After reading the section of the report dealing with the recommendation on the reactivation of *Fall Bulletin* and *Presessional Bulletin*, he moved the adoption of that section of the report. The motion was seconded by Dr. Conrad Berens, New York, was put to a vote and was carried.

Dr. Derrick Vail, after having read the following section of the report, moved its adoption:

"2. Restatement of Establishment and Purposes of Knapp Testimonial Fund: The Executive Committee of the Section has investigated the establishment of the Herman Knapp Testimonial Fund and wishes to bring up to date and to have spread on the minutes of the Section, a statement of the purposes for which it was originally established in 1910 and modified in 1912.

(*a*) A Knapp Medal to contributors who are members of the Section for original work in ophthalmology or a summary of the literature, or some contribution of such a highly meritorious character in the field of ophthalmology as would warrant the granting of a medal."

After the motion of Dr. Vail had been seconded, Dr. Arthur J. Bedell, Albany, N. Y., offered an amendment that the whole matter of the restatement of establishment and purposes of the Knapp Testimonial Fund be referred back to the Committee for Award of the Knapp Medal and the Executive Committee, and be brought before the Section next year. The amendment, having been seconded and discussed, was put to a vote and was carried.

The motion as amended was carried.

After having read the following portion of the report, Dr. Vail moved its adoption:

"3. Renaming of Ophthalmic Research Medal: The Executive Committee of the Section recommends that the name of the medal of the Section hitherto known as the 'Ophthalmic Research Medal, Section on Ophthalmology, American Medical Association,' be changed to 'Medal for Outstanding Contributions to Ophthalmology.'"

The motion was seconded by Dr. Arthur J. Bedell, Albany, N. Y., was put to a vote and was carried.

The following committee appointments were approved: Committee to represent the Section on Ophthalmology at the Helmholtz Centennial in 1950, Dr. Michael J. Hogan, San Francisco, and Dr. Orwyn H. Ellis, Los Angeles; Joint Committee on Optics and Visual Physiology, Dr. Walter B. Lancaster, Boston; Committee on American Board of Ophthalmology, Dr. John H. Dunnington, New York; chairman, Section Committee on Scientific Exhibit, Dr. Donald J. Lyle, Cincinnati; Committee on American Orthoptic Council, Dr. LeGrand Hardy, New York; representative to Board of Governors of American College of Surgeons, Dr. Albert D. Ruedemann, Detroit.

The following officers were elected: chairman, Dr. A. Ray Irvine, Beverly Hills, Calif.; vice chairman, Dr. Albert N. Lemoine, Kansas City, Mo.; secretary, Dr. Trygve Gundersen, Boston; executive committee: Dr. Everett L. Goar, Houston, Texas; Dr. M. Hayward Post, St. Louis; Dr. A. Ray Irvine, Beverly Hills, Calif.; delegate, William L. Benedict, Rochester, Minn.; alternate, Dr. Parker Heath, Boston.

The following committee for the Knapp Medal award was elected: Dr. Arnold Knapp, New York; Dr. Francis H. Adler, Philadelphia; Dr. P. J. Leinfelder, Iowa City.

Dr. Merrill J. King, Boston, read a paper on "A Clinical Study of 238 Cases of Retrolental Fibroplasia." Discussed by Drs. William C. Owens, Baltimore; Arthur C. Unsworth, Hartford, Conn., and Merrill J. King, Boston.

Dr. Parker Heath, Boston, presented a paper on "Retrolental Fibroplasia: A Study of Its Pathology." Discussed by Drs. Algernon B. Reese, New York, and Parker Heath, Boston.

Drs. James H. Allen and Luciano Barrere, Iowa City, presented a paper on "Prophylaxis of Gonorrheal Ophthalmia of the Newborn." Discussed by Drs. Alan C. Woods, Baltimore; Jay G. Linn, Pittsburgh; Louis Lehrfeld, Philadelphia, and James H. Allen, Iowa City.

Drs. Alfred Cowan and Joseph V. Klauder, Philadelphia, presented a paper on "The Frequency of the Occurrence of Cataract in Atopic Dermatitis." Discussed by Drs. William P. Beetham, Boston; Arthur Alexander Knapp, New York, and Alfred Cowan, Philadelphia.

New instruments were demonstrated by Drs. Walter B. Lancaster, Boston; Thomas D. Allen, Chicago; Conrad Berens, New York; James E. Lebensohn, Chicago; William H. Luedde, St. Louis, and Harvey Thorpe, Pittsburgh.

### Friday, June 10—Afternoon

Dr. Gambiattista Bietti, Pavia, Italy, read a paper on "New Trends in Ciliary Body Surgery for the Relief of Glaucoma." Discussed by Drs. Conrad Berens, New York; S. J. Meyer, Chicago; Lawrence T. Post, St. Louis, and Gambiattista Bietti, Pavia, Italy.

Dr. Paul W. Miles, St. Louis, read a paper on "Flicker Fusion Fields: III. Findings in Early Glaucoma." Discussed by Drs. Lawrence T. Post and Paul W. Miles, St. Louis.

Drs. R. Douglas Sanders and Norman L. Cutler, Wilmington, Del., presented a paper on "General Anesthesia for Cataract Surgery."

Dr. Felician J. Slataper, Houston, Texas, read a paper on "Age Norms of Refraction and Vision." Discussed by Drs. Alfred Cowan, Philadelphia; Everett L. Goar, Houston, Texas, and Filician J. Slataper, Houston, Texas.

Dr. J. Rudolph Jaeger, Philadelphia, read a paper on "The Syndrome of Aneurysm of the Intracranial Carotid: Frontal Headache with Oculomotor Nerve Paralysis." Discussed by Drs. Frank E. Walsh, Baltimore; James W. Smith, New York, and J. Rudolph Jaeger, Philadelphia.

Dr. David B. Kirby, New York, read a paper on "The Use of Curare in Intraocular Surgery." Discussed by Drs. Frederick C. Cordes, San Francisco; W. B. Clark, New Orleans, and David B. Kirby, New York.

## SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

### Wednesday, June 8—Morning

The meeting was called to order at 9:10 a. m. by the chairman, Dr. Henry B. Orton, Newark, N. J.

Dr. Daniel S. Cunning, New York, presented a paper on "Diagnosis and Treatment of Laryngeal Tumors." Discussed by Drs. Morley T. Smith, New Rochelle, N. Y.; Edward J. Whalen, Hartford, Conn.; Joseph I. Kemler, Baltimore; Henry M. Scheer, New York; Maurice Lenz, New York, and Daniel S. Cunning, New York.

Dr. Stacy R. Guild, Baltimore, read a paper on "Interpretation of Hearing Tests, with Special Reference to Conduction Deafness." Discussed by Drs. Thomas Sage, Detroit; James B. Costen, St. Louis; Arthur L. Juers, Chicago, and Stacy R. Guild, Baltimore.

Dr. Lyndon A. Peer, Newark, N. J., presented a paper on "Complete Reconstruction of the Auricle with Diced Cartilage Grafts Inserted in a Perforated Vitallium® Ear Mold." Discussed by Drs. Clarence Straatsma, New York; Frederick A. Figi, Rochester, Minn., and Lyndon A. Peer, Newark, N. J.

Dr. Walter P. Work, San Francisco, presented a paper on "Paranasal Sinuses in Relation to Skull Injury, Subsequent Defects and Their Correction with Tantalum Plates." Discussed by Drs. I. Jerome Hauser, Detroit; Edgar M. Holmes, Boston, and Walter P. Work, San Francisco.

Dr. David D. DeWeese, Portland, Ore., read a paper on "Evaluation of the 'Dizzy' Patient." Discussed by Drs. Frank D. Lathrop, Boston; James W. McLaurin, Baton Rouge, La.; Lester Coleman, New York, and David D. DeWeese, Portland, Ore.

### Thursday, June 9—Morning

The following officers were elected: chairman, Dr. William H. Johnston, Santa Barbara, Calif.; vice chairman, Dr. Harold Hickey, Denver; secretary, J. Milton Robb, Detroit; executive committee, Dr. Fletcher D. Woodward, Charlottesville, Va.; Dr. Henry B. Orton, Newark, N. J., and Dr. William H. Johnston, Santa Barbara, Calif.; delegate, Dr. Gordon Harkness, Davenport, Iowa; alternate, Dr. C. H. McCaskey, Indianapolis; representative to Board of Governors of American College of Surgeons, Dr. Charles Blassingame, Memphis, Tenn.; chairman, Section Committee on Scientific Exhibit, James B. Costen, St. Louis; representatives to International Congress of Otolaryngology in London, July 18-23, 1949, Dr. Louis H. Clerf, Philadelphia, and Dr. Leroy Schall, Boston.

On motion of Dr. C. H. McCaskey, Indianapolis, seconded by Dr. Henry M. Scheer, New York, it was voted that the question of whether the Section meeting should consist of three days be referred to the executive committe for decision and action.

Dr. Henry B. Orton, Newark, N. J., read the chairman's address, entitled "The Future Laryngologist."

Dr. W. Likely Simpson, Memphis, Tenn., presented a paper on "The Ethmo-Spheno-Frontal Sinus Operation." Discussed by Drs. J. Milton Robb, Detroit; Sam E. Roberts, Kansas City, Mo., and W. Likely Simpson, Memphis, Tenn.

Drs. Sam E. Roberts and Frank S. Forman, Kansas City, Mo., presented a paper on "Direct Laryngoscopy: Simplified Technic." Discussed by Drs. Frederick A. Figi, Rochester, Minn.; Daniel S. Cunning, New York, and Sam E. Roberts, Kansas City, Mo.

Dr. Delmar F. Weaver, Detroit, read a paper on "Diagnosis and Treatment of Tumors of the Neck." Discussed by Drs. Louis H. Clerf, Philadelphia; Ralph J. McQuiston, Indianapolis; Henry B. Orton, Newark, N. J., and Delmar F. Weaver, Detroit.

## SECTION ON PEDIATRICS

WEDNESDAY AFTERNOON, JUNE 8, 1949

The meeting was called to order at 2 p. m. by the chairman, Dr. Woodruff L. Crawford, Rockford, Ill.

The first paper on the program was "Treatment of Acute Rheumatic Fever and Prevention of Recurrences," by Dr. Robert L. Jackson, Iowa City. This was discussed by Drs. William Weston Jr., Columbia, S. C.; John P. Hubbard, Philadelphia; May G. Wilson, New York; Lord Horder, Great Britain, and Dr. Robert L. Jackson.

A paper entitled, "The Treatment of Infection with New Antibiotics," by Drs. Perrin H. Long, Emanuel B. Schoenbach, Morton S. Byrer, Caroline A. Chandler and Eleanor A. Bliss, Baltimore, was presented by Dr. Perrin H. Long, and discussed by Drs. Vernon Knight, New York; Robert B. Lawson, Winston-Salem, N. C., and Perrin H. Long.

A paper entitled, "Three Day Fever: An Endemic Febrile Disease of Childhood, with Virus Studies," by Drs. Clarence H. Webb, Shreveport, La.; S. George Wolfe, New York, and Beatrice F. Howitt, Montgomery, Ala., was read by Dr. Clarence H. Webb and discussed by Drs. Thomas F. McNair Scott, Philadelphia; George J. Boines, Wilmington, Del., and Clarence H. Webb.

"Acute Conjunctivitis Caused by Hemophilus," by Drs. Dorland J. Davis and Margaret Pittman of Bethesda, Md., was presented by Dr. Davis and discussed by Drs. James C. Overall, Nashville, Tenn.; Samiye Argut, Ankara, Turkey; Thomas D. Allen, Chicago; Alson E. Braley, New York, and Dorland J. Davis.

"Congenital Obstruction of the Alimentary Tract" was read by Dr. William E. Anspach, Chicago, and discussed by Drs. Orvar Swenson, Boston; Mercer Blanchard, Columbus, Ga., and McLenmore Birdsong, Charlottesville, Va., with closing discussion by Dr. Anspach.

"Congenital Dislocation of the Hip Joint: Early Recognition and Prevention," by Dr. Vernon L. Hart, Minneapolis, was discussed by Drs. Russell C. Bond, Wheeling, W. Va.; Mayer S. DeRoy, Pittsburgh, and Charles C. Chapple, Philadelphia.

THURSDAY, JUNE 9—AFTERNOON

The following officers were elected: chairman, Dr. Margaret Mary Nicholson, Washington, D. C.; vice chairman, Dr. Adolph De Sanctis, New York; secretary, Dr. Wyman C. C. Cole, Detroit; delegate to House of Delegates of American Medical Association, Dr. William Weston Sr., Columbia, S. C.; alternate, Dr. Julius Hess, Chicago; representative on the Scientific Exhibit, Dr. Albert V. Stoesser, Minneapolis; executive committee, Dr. Margaret Mary Nicholson, Washington, D. C.; Dr. Woodruff L. Crawford, Rockford, Ill., and Dr. Stanley Gibson, Chicago.

Dr. Nicholson, serving as secretary, reported on a communication received, suggesting the transfer of the Abraham Jacobi Fund to a medical library, the John Ferrara Library in Chicago, and said that, after discussion, the Executive Committee had stated the opinion that the Fund should not be diverted to any other purpose than that for which it was established, i. e., for financial assistance to distinguished guests. The Executive Committee was also of the opinion that further funds should be solicited for this purpose, and also that the custodian be elected yearly.

On motion made by Dr. Harry M. Gilkey, seconded by Dr. James Overall, it was unanimously voted to keep the Fund intact, that contributions should be solicited and that Dr. Hugh Dwyer of Kansas City, the present custodian, be reelected.

On motion made by Dr. Gilbert Levy and seconded by Dr. Weston, it was unanimously voted to introduce a resolution in the House of Delegates to the effect that, whereas 75 per cent of the care of children is in the hands of the general practitioner and about one third of the work of the general practitioner is in the field of pediatrics, there should be developed a regular examination in pediatrics by the various state boards of medical licensure, to encourage students and interns in informing themselves on the care of children, with the suggestion that a practicing pediatrician assist in the framing of such an examination.

A symposium on congenital heart disease followed, including the following papers:

"Congenital Heart Disease from the Pediatric View," by Dr. Stanley Gibson, Chicago.

"The Diagnosis and the Differential Diagnosis of Congenital Heart Defects Amenable to Surgery," by Dr. Helen B. Taussig, Baltimore.

"Common Cardiac Defects Which Can Be Treated by Surgery: Discussed from Standpoint of Functional Pathology," by Dr. Jesse E. Edwards, Rochester, Minn.

"Angiocardiographic Examples," by Dr. John D. Keith, Toronto, Canada.

"Problems Encountered in Surgical Treatment of Patients with Coarctation of the Aorta," by Dr. Alfred Blalock, Baltimore.

The symposium was discussed by Dr. John C. Jones, Los Angeles, who presented a motion picture on "Coarctation of the Aorta."

FRIDAY, JUNE 10—AFTERNOON

A paper on "Medical Implications and Applications of Radioisotopes" was read by Dr. George M. Lyon of Alexandria, Va., and discussed by Drs. Malcolm W. Mason and Fred R. Lang of Bethesda, Md., with closing discussion by Dr. Lyon.

"Factors Responsible for Laryngeal Obstruction in Infants," by Dr. Paul H. Holinger, Chicago, was presented in the form of a motion picture, with discussion by Drs. Louis H. Clerf and Waldo E. Nelson, Philadelphia, and Dr. E. Clarence Rice, Washington, D. C., with closing discussion by Dr. Holinger.

"Asphyxia of the Newborn" was presented by Dr. C. C. Cole of Detroit, with discussion by Drs. Stewart H. Clifford, Brookline, Mass.; William F. O'Donnell, Washington, D. C.; James B. Stone, Richmond, Va., and W. Allen Conroy, Chicago.

"Evils of Thumb Sucking" was presented by Dr. Charles Hendee Smith, New York, with discussion by Drs. Henry H. Work Jr., Arlington, Va.; Argimiro Brachamonte, Berquisimeto, Venezuela; Marjorie Horner, Wema, Belgian Congo, and Dr. Smith.

Announcement was made of the Sixth International Pediatrics Congress to be held in Zurich, Switzerland, on July 24-28, 1950, and the Pan-American Pediatrics Congress in Mexico City on Nov. 1-4, 1949.

Dr. Frank Howard Richardson, Asheville, N. C., read a paper entitled, "Breast Feeding Comes of Age," which was discussed by Drs. Alicia Gallaga Romero, Mexico; M. Hines Roberts, Atlanta, Ga., and Dr. Richardson.

"Chemotherapy of Childhood Cancer Including Leukemia" was read by Dr. Sidney Farber of Boston and discussed by Drs. Murray Shear, Bethesda, Md.; Lewis Katz Albert, Washington, D. C.; Roswell D. Johnson, New Orleans; S. D. Mills, Rochester, Minn., and Oscar Brentwood Hunter Jr., Washington, D. C., with closing discussion by Dr. Farber.

## SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

WEDNESDAY, JUNE 8—AFTERNOON

The meeting was called to order at 2 p. m. by the chairman, Dr. Dwight L. Wilbur, San Francisco.

Dr. Chester S. Keefer, Boston, read a paper on "Dosage Forms of Penicillin." This paper was discussed by Drs. Dwight L. Wilbur, San Francisco; Eli Levin, Rochester, N. Y., and Charles Fox, New York.

Dr. Walsh McDermott, New York, read a paper on "The Relation of Streptomycin Dosage to Toxicity and to Emergence of Resistant Organisms." This paper was discussed by Drs. Harry F. Dowling and John R. Barnwell, Washington, D. C.

Dr. Wesley W. Spink, Minneapolis, read a paper on "Aureomycin: Present Status in the Treatment of Human Infections." This paper was discussed by Drs. Martin H. Siefert, Wilmette, Ill.; David I. Macht, Baltimore; Carl V. Moore, St. Louis, and Harold A. Lyons, St. Albans, Long Island, N. Y.

Dr. Joseph E. Smadel, Washington, D. C., read a paper on "Clinical Use of the New Antibiotic Chloramphenicol (Chloromycetin)." This paper was discussed by Drs. Theodore E.

Woodward, Baltimore; Harold T. Hyman, New York; Harry Huber, Chicago, and Francis H. Redewill, San Francisco.

Dr. Norman H. Topping, Bethesda, Md., read a paper on "Research on the Common Cold." There was no discussion of this paper.

Dr. Hilary Koprowski, Pearl River, N. Y., read a paper on "Antiserum in Rabies: Use of Hyperimmune Antirabies Serum Concentrates in Experimental Rabies and Indications for Its Use After Exposure of Humans to Rabies." This paper was discussed by Dr. Karl Habel, Bethesda, Md.

### THURSDAY, JUNE 9—AFTERNOON

The following officers were elected: chairman, Dr. McKeen Cattell, New York; vice chairman, Dr. James A. Greene, Houston, Texas; secretary, Dr. Carl V. Moore, St. Louis; executive committee, Drs. Walter Bauer, Boston; Dwight Wilbur, San Francisco, and McKeen Cattell, New York; delegate, Dr. Edgar V. Allen, Rochester, Minn.; alternate, Dr. Charles M. Gruber, Philadelphia; representative to the Committee on Scientific Exhibits, Dr. Robert W. Wilkins, Boston.

Dr. Dwight L. Wilbur, San Francisco, read a paper on "The Clinical Management of the Patient with Fatigue and Nervousness." There was no discussion of this paper.

Dr. Edward H. Reissner, New York, read a paper by the late Dr. Randolph West, New York, on "The Treatment of Addisonian Pernicious Anemia with Vitamin $B_{12}$." This paper was discussed by Drs. William J. Darby, Nashville, Tenn., and Byron E. Hall, Rochester, Minn.

Drs. Edward H. Reinhard and James T. Good, St. Louis, and Edward Martin, New Britain, Conn., presented a paper on "Chemotherapy of Malignant Neoplastic Diseases." This paper was discussed by Drs. J. M. Stickney, Rochester, Minn.; William Dameshek, Boston, and M. J. Shear, Bethesda, Md.

Dr. John H. Talbott, Buffalo, read a paper on "The Use of Lithium Salts as a Salt Substitute." This paper was discussed by Drs. Henry A. Schroeder, St. Louis, and McKeen Cattell, New York.

Dr. Cyril M. MacBryde, St. Louis, read a paper on "Modern Treatment of Diabetes with Special Reference to the Use of New Modified Protamine Insulin." This paper was discussed by Dr. Henry Dolger, New York.

### FRIDAY, JUNE 10—MORNING

Joint meeting with Section on Internal Medicine.

## SECTION ON PATHOLOGY AND PHYSIOLOGY

### WEDNESDAY, JUNE 8—MORNING

The meeting was called to order at 9 a. m. by the chairman, Dr. George E. Wakerlin, Chicago.

Dr. Charles A. Doan, Columbus, Ohio, presented the subject, "The Pathologic Physiology of the Spleen." This subject was discussed by Drs. Carroll Birch, Chicago; Edwin Hirsch, Chicago; William Dameshek, Boston; Frank Lahey, Boston; Harry Corper, Denver, and George E. Wakerlin, Chicago.

Dr. William Dameshek, Boston, presented a paper on "The Physiopathology and Course of Polycythemia Vera." This paper was discussed by Drs. Paul Reznikoff, New York; Paul Klemperer, New York; Perk Lee Davis, Philadelphia; Edward H. Reinhard, St. Louis; F. W. S. Modern, Van Nuys, Calif., and John Lawrence, Berkeley, Calif.

Dr. Julius H. Comroe Jr., Philadelphia, presented the subject, "Recent Advances in the Physiology of Respiration with Particular Reference to Oxygen Therapy." This paper was discussed by Drs. Alvan L. Barach, New York; Carl Wiggers, Cleveland, and Stanley J. Sarnoff, Boston.

Dr. Henry Miles, Boston, read a paper by Dr. Jacob E. Finesinger on "The Clinical Physiology of the Psychoneuroses." This paper was discussed by Drs. Richard M. Brickner, New York; Roland P. Mackay, Chicago; Mortimer Sackler, New York; M. M. Harris, New York; O. L. Friedman, New York, and George E. Wakerlin, Chicago.

### THURSDAY, JUNE 9—MORNING

The following officers were elected: chairman, Dr. Frank W. Konzelman, Atlantic City; vice chairman, Dr. A. S. Giordano, South Bend, Ind.; secretary, Edwin F. Hirsch, Chicago; executive committee, Dr. Alvin Foord, Pasadena, Calif.; Dr. George E. Wakerlin, Chicago, and Dr. Frank W. Konzelman, Atlantic City, N. J.; delegate, Dr. L. W. Larson, Bismarck, N. D.; alternate, Dr. Harry J. Corper, Denver.

After discussion concerning the advisability of changing the name of the section, it was moved, duly seconded, put to a vote and carried that the name remain as at present.

Dr. George E. Wakerlin, Chicago, read his chairman's address.

Dr. Bernard Steinberg, Toledo, Ohio, read a paper on "Studies of Production and Distribution of Leukocytes and Platelets: Demonstration of the Expulsion Factor for Leukocytes." This paper was discussed by Drs. Harry J. Corper, Denver; Jacob E. Pinzen, Philadelphia, and George E. Wakerlin, Chicago.

Drs. Henry Horn, Leonard E. Field, Simon Dack and Arthur M. Master, New York, presented a paper on "The Pathologic and Physiologic Aspects of Acute Coronary Insufficiency: An Analysis of Twenty-five Cases of Subendocardial Necrosis." This paper was discussed by Drs. Paul Klemperer, New York; Arthur M. Master, New York; Irving Graef, New York; Jacob Werne, New York, and Theodore Curfee, Garden City, N. Y.

Dr. H. Russell Fisher, Los Angeles, read a paper on "The Histopathology of Scleroma." This paper was discussed by Drs. Paul Klemperer, New York, and Frank W. Konzelman, Atlantic City, N. J.

Dr. Irving Graef, New York, read a paper on "Cardiac Lesions in Rheumatoid Arthritis." This paper was discussed by Dr. David Klink, Los Angeles.

### FRIDAY, JUNE 10—MORNING

The joint meeting of the Section on Pathology and Physiology with the Section on Gastro-Enterology and Proctology met in the Wedgewood Room, Chelsea Hotel, at 9 a. m., Dr. George E. Wakerlin presiding.

A paper on "Acute and Chronic Pancreatitis," by Dr. A. C. Ivy, Chicago, was not given, because Dr. Ivy was unable to be present.

Dr. J. Peerman Nesselrod, Evanston, Ill., and Dr. Jay M. Garner, Winnetka, Ill., presented a motion picture in color of "Chronic Ulcerative Colitis: Proctoscopic Appearance." This presentation was discussed by Drs. J. A. Bargen, Rochester, Minn.; Sidney A. Portis, Chicago; D. N. Silverman, New Orleans; William A. Swalm, Philadelphia; Jay M. Garner, Rochester, Minn., and Otto De Muth, Vancouver, British Columbia, Canada.

Dr. David State, Minneapolis, read a paper on "An Attempt to Identify Likely Precursor Groups of Gastric Cancer." This paper was discussed by Drs. Russell H. Morgan, Baltimore, and Alexander Brunschwig, New York.

Dr. Edward B. Benedict, Boston, read a paper on "The Value of Gastric Biopsy as Obtained Through the Flexible Operating Gastroscope." This paper was discussed by Drs. H. J. Moersch, Rochester, Minn.; Cecil O. Patterson, Dallas, Texas, and Louis E. Marshall, New York.

Dr. Franklin M. Hanger, New York, read a paper on "Diagnostic Problems in Jaundice." This paper was discussed by Drs. Richard B. Capps, Chicago; John R. Neefe, Philadelphia, and Hans Schiff, Lousiana.

## SECTION ON NERVOUS AND MENTAL DISEASES

### WEDNESDAY, JUNE 8—AFTERNOON

The meeting was called to order at 2 p. m. by the chairman, Dr. Francis J. Gerty, Chicago.

The paper entitled "Spontaneous Nontraumatic Hematomas" was read by Dr. Michael Scott, Philadelphia. The discussants were Drs. J. Rudolph Jaeger, Philadelphia; H. C. Voris, Chicago, and Michael Scott, Philadelphia.

Dr. A. Earl Walker, Baltimore, read a paper entitled "The Place of Neurologic Surgery in the Treatment of Epilepsy." Discussed by Dr. John E. Scarff, New York, and Dr. A. Earl Walker, Baltimore.

A paper by Drs. William H. Sweet and Stanley J. Sarnoff, Boston, entitled "A Clinical Method for Recording Internal Carotid Pressure: Significance of Changes During Carotid Occlusion," was read. Discussed by Drs. Henry A. Shenkin, Philadelphia; Arthur Ecker, Syracuse; Stanley J. Sarnoff, Boston, and William H. Sweet, Boston.

A paper on "The Treatment of Arnold-Chiari Malformation in Adults" was presented by Dr. W. James Gardner, Cleveland. The discussants were Drs. Ben W. Lichtenstein, Chicago; Jerome F. Grunnagle, Pittsburgh; Roland P. Mackay, Chicago; Michael Scott, Philadelphia; William H. Sweet, Boston, and W. James Gardner, Cleveland.

A paper entitled "The Effect of Head Posture on Cerebrospinal Fluid Manometrics in Cervical Lesions: A New Diagnostic Test" was presented by Drs. Lawrence I. Kaplan and Foster Kennedy, New York. Discussed by Luman E. Daniels, Denver, and Foster Kennedy, New York.

Dr. Joe R. Brown, Minneapolis, read a paper entitled "Localizing Cerebellar Syndromes." The discussants were Drs. Benjamin H. Balser, New York; Averill Stowell, Tulsa, Okla., and Joe R. Brown, Minneapolis.

### THURSDAY, JUNE 9—AFTERNOON

The following officers were elected: chairman, Dr. Frederick R. Moersh, Rochester, Minn.; vice chairman, Dr. A. E. Bennett, Berkeley, Calif.; secretary, Dr. Francis Forster, Philadelphia; delegate, Dr. Percival Bailey, Chicago; alternate, Dr. Luman E. Daniels, Denver; representative to the American Board of Psychiatry and Neurology, Dr. George N. Raines, Bethesda, Md.

Dr. Hans H. Reese, Madison, Wis., then reported on the work accomplished at the meeting of the House of Delegates.

Dr. Francis M. Forster, Philadelphia, then read a report from the Secretary of the American Board of Psychiatry and Neurology.

Dr. Francis M. Forster, Philadelphia, then read a report on a request for a subspecialty board in pediatric psychiatry.

Dr. K. B. Corbin, Rochester, Minn., then moved that the following resolution be adopted:

> The Section on Nervous and Mental Diseases of the American Medical Association opposes the formation of any new subspecialty board of the American Board of Psychiatry and Neurology at this time. If any certification is given in a subspecialty in the fields of neurology and/or psychiatry, the certification should be given by the American Board of Psychiatry and Neurology, Inc., only after the candidate has received certification in psychiatry, neurology, or both, by the American Board of Psychiatry and Neurology.

The resolution was voted on and carried.

Dr. Francis J. Gerty gave the chairman's address entitled "The Scope and Relationship of Psychiatry in Medicine."

Dr. Douglas Goldman, Cincinnati, presented a paper entitled "Treatment of Neurosyphilis with Penicillin." Discussed by Drs. George D. Gammon and John H. Stokes, of Philadelphia; Dr. Irving J. Sands, Brooklyn; Dr. Roland Mackay, Chicago, and Dr. Douglas Goldman, Cincinnati.

A paper entitled "The Evaluation of Artane in the Treatment of Parkinsonism" was presented by Dr. Kendall B. Corbin of Rochester, Minn. This subject was discussed by Dr. Peter G. Denker, New York; Roland P. Mackay, Chicago, and Dr. K. B. Corbin, Rochester, Minn.

A paper entitled "The Psychiatric Manifestations of Certain Convulsive Disorders" by Dr. Richard L. Masland, Winston-Salem, N. C., was presented. Discussed by Drs. Calvin S. Drayer, Philadelphia; Francis M. Forster, Philadelphia, and Richard L. Masland, Winston-Salem, N. C.

A paper by Dr. Joseph L. Fetterman, Cleveland, entitled "Mesantoin and Combined Therapy, A Three Year Study" was presented. Discussed by Drs. H. Houston Merritt, New York; William Shapera, Philadelphia; H. E. Cohen, New York, and Joseph L. Fetterman, Cleveland.

Dr. Andrew J. Leemhuis, Minneapolis, read a paper entitled "Retraining Therapy in Neurologic Diseases." Discussed by Drs. Pearce Bailey, Washington, D. C.; Hans H. Reese, Madison, Wis., and Andrew J. Leemhuis, Minneapolis.

### FRIDAY, JUNE 10—AFTERNOON

A telegram from Dr. Herbert A. Perry, Medical Lake, Wash., was read to the section referring to his absence; Dr. Perry was to have presented the first paper at this meeting.

Drs. James Purtell, Milwaukee, and Eli Robbins, Boston, presented a paper entitled "Clinical Aspects of Hysteria: A Study of 100 Cases and 100 Control Subjects." Discussed by Drs. J. M. Nielsen, Los Angeles; R. L. Masland, Winston-Salem, N. C.; Charles Rupp, Philadelphia; Frederick C. Redlich, New Haven, Conn., and James Purtell, Milwaukee.

A paper entitled "Ictal and Nonictal Psychiatric Disorder in Temporal Lobe Epilepsy" by Dr. Frederick A. Gibbs, Chicago, was read. Discussed by Drs. R. L. Masland, Winston-Salem, N. C.; Gordon K. Damman, St. Paul; Roland P. Mackay, Chicago; J. M. Nielsen, Los Angeles, and Frederick A. Gibbs, Chicago.

Dr. Paul H. Hoch, New York, read a paper entitled "Theoretical Aspects of Prefrontal Lobotomy and Similar Operations." Discussed by Drs. A. R. Vonderahe, Cincinnati; Walter Freeman, Washington, D. C.; Foster Kennedy, New York, and Paul H. Hoch, New York.

A paper entitled "Practical Considerations in the Treatment of the Mentally Ill" was read by Dr. Irving J. Sands, New York. Discussed by Dr. George N. Raines, Bethesda, Md.; Dr. Joseph C. Yaskin, Philadelphia; Dr. Paul H. Hoch, New York, and Dr. Irving J. Sands, New York.

Drs. Frederick Lemere and Paul O'Hallaren, Seattle, presented a paper entitled "Intravenous Pentathol® in the Treatment of Alcoholism." Discussed by Drs. Robert V. Seliger, Baltimore, J. M. Nielsen, Los Angeles, and Frederick Lemere.

## SECTION ON DERMATOLOGY AND SYPHILOLOGY

### WEDNESDAY, JUNE 8—AFTERNOON

The meeting was called to order at 2 p. m. by the chairman, Dr. Anthony C. Cipollaro, New York.

Dr. Everett C. Fox, Dallas, Texas, section delegate, gave a report on the Interim Session of the House of Delegates which was held in St. Louis in November 1948, and the meeting held June 6-7, 1949, at Atlantic City.

Dr. Francis W. Lynch, St. Paul, read his report as section representative on the Scientific Exhibit Committee.

Dr. George K. Lewis, New York, presented the report of the American Board of Dermatology and Syphilology.

Dr. Nelson Paul Anderson, Los Angeles, read the report of the nominating committee.

Dr. J. G. Downing, Boston, on behalf of the Committee on International Congress, gave a progress report to the effect that present world conditions did not permit an international congress but that, when one is held, it would be desirable to hold it in Europe.

Dr. Clinton W. Lane, St. Louis, secretary, reported concerning the decision of the Council on Scientific Assembly to limit the meeting of sections to two days instead of the customary three days, the reason being the difficulty in securing adequate housing. He stated that he was chagrined to learn that only one other section besides the Section on Dermatology and Syphilology had finally been limited to two days, the other sections having protested to such an extent that they were given the third day. The secretary said that he had an oral promise that the section would receive consideration in plans for the 1950 convention in San Francisco.

Dr. Anthony C. Cipollaro, New York, read the chairman's address, entitled "Dermatology and Syphilology in a Modern Medical Program."

Dr. W. B. Guy, Pittsburgh, read a paper entitled "Protein Deficiency in Cutaneous Disease." Discussed by Drs. F. J. Eichenlaub, Washington, D. C.; John H. Lamb, Oklahoma

City, Okla.; Michael Wohl, Philadelphia; S. Tashian, Seattle, Wash., and W. B. Guy, Pittsburgh.

Dr. J. G. Downing, Boston, presented a paper on "Simulation and Self Infliction in Industrial Dermatology." Discussed by Drs. J. W. Jordon, Buffalo; Alfred Hollander, Springfield, Mass.; Theodore Cornbleet, Chicago, and J. G. Downing, Boston.

Dr. Leon Goldman, Cincinnati, read a paper entitled "The Dermatologic Aspects of Insect Repellents and Toxicants." Discussed by Drs. Theodore Cornbleet, Chicago; Bertram Shaffer, Philadelphia; Bernard Appel, Lynn, Mass., and Leon Goldman, Cincinnati.

Dr. H. M. Robinson Jr., Baltimore, presented a paper, "A Comparative Analysis of the Muco-Cutaneous-Ocular Syndromes." Discussed by Drs. Helen O. Curth, New York; H. M. Robinson Sr., Baltimore; Walter Lever, Boston, and H. M. Robinson Jr., Baltimore.

Drs. V. M. Henington, Frederick Grieshaber and J. K. Howles, New Orleans, presented a paper entitled "Dermatoses of the Colored Race." Discussed by Drs. T. W. Murrell Jr., Richmond, Va.; George K. Lewis, New York; E. F. Corson, Philadelphia, and V. M. Henington, New Orleans.

### Thursday, June 9—Afternoon

The following officers were elected: chairman, Dr. Clinton W. Lane, St. Louis (1 year); vice chairman, Dr. Norman Epstein, San Francisco (1 year); secretary, Dr. John H. Lamb, Oklahoma City (3 years); executive committee: Drs. Henry E. Michelson, Minneapolis (1 year); Anthony C. Cipollaro, New York (2 years), and Clinton W. Lane, St. Louis (3 years); delegate, Everett C. Fox, Dallas, Texas (1 year); alternate, Leonard Weber, Chicago (1 year); representative to American Board of Dermatology and Syphilology, George K. Lewis, New York (3 years); representative on Scientific Exhibit Committee, Francis W. Lynch, St. Paul (3 years).

On motion made by Dr. J. G. Downing, Boston, and seconded by Dr. Francis W. Lynch, St. Paul, it was voted that the members of the Section of Dermatology and Syphilology instruct the incoming secretary to notify, in writing, the Council on Scientific Assembly that the curtailment of the session was resented and to demand that the original period of three days be restored.

Dr. Wallace Wilson, Los Angeles, presented the following resolution:

> Whereas, Approximately 30 per cent of the incidence of human disease is dermatologic in nature, while only 3 per cent of medical teaching is pointed in that direction; and
>
> Whereas, The delineation between dermatologic and nondermatologic disorders is at least as sharp as that governing any other specialty; and
>
> Whereas, Dermatology is now successfully attracting research and clinical personnel in sufficient quantity and quality to enable it to fulfill adequately its obligations to humanity and to the practice of medicine whenever it is given the opportunity; now, be it
>
> *Resolved,* By the Section on Dermatology and Syphilology of the American Medical Association that dermatology shall take its rightful place as a full and separate specialty in all American localities and institutions; and be it further
>
> *Resolved,* That the specialty of dermatology shall be given physical, intellectual, moral and financial support commensurate with its proper position leading to the adequate control of human morbidity; and be it further
>
> *Resolved,* That all American dermatologists pledge their continued attention and activity to this end within their separate spheres of influence.

It was voted that the foregoing resolution be sent direct to Dr. George F. Lull, Secretary and General Manager of the American Medical Association, with the request that he transmit it direct to the Board of Trustees.

Dr. C. Guy Lane, Boston, delivered the Distinguished Lecture in Dermatology, entitled "The Development of Standards in Dermatology."

On behalf of the section, Dr. Anthony C. Cipollaro, New York, chairman of the section, presented a scroll to Dr. C. Guy Lane.

Dr. L. P. Barker, New York, read a paper entitled "Rickettsialpox." Discussed by Drs. Nelson Paul Anderson, Los Angeles; Eugene Traugott Bernstein, New York, and L. P. Barker, New York.

Drs. T. H. Sternberg, D. J. Perry and Paul LeVan, Los Angeles, presented a paper on "Comparative Activity in Human Subjects of Antihistamine Drugs as Determined by Histamine Iontophoresis." Discussed by Drs. D. M. Pillsbury, Philadelphia, and T. H. Sternberg, Los Angeles.

Drs. George A. Waldriff, Jeff Davis and G. M. Lewis, New York, presented a paper entitled "Antihistamine Therapy in Dermatology." Discussed by Drs. D. M. Ruch, Milwaukee; F. A. Ellis, Baltimore; Charles S. D'Avanzo, Springfield, Mass.; Stephan Epstein, Marshfield, Wis.; G. H. Curtis, Cleveland, and Jeff Davis, New York.

Dr. E. F. Traub, New York, read a paper entitled "The Benign Pigmented Epithelial Nevus." Discussed by Drs. W. M. Sams, Miami, Fla.; Hamilton Montgomery, Rochester, Minn., and E. F. Traub, New York.

Dr. M. J. Strauss, New Haven, Conn., read a paper on "Spindle Cell Epidermoid Carcinoma." Discussed by Drs. M. D. Marcus, St. Louis; Hamilton Montgomery, Rochester, Minn.; Walter Lever, Boston, and M. J. Strauss, New Haven, Conn.

Drs. H. N. Cole Jr., Cleveland, and W. R. Hubler, Corpus Christi, Texas, presented a paper entitled "Misplaced Mongolian Spot." Discussed by Drs. S. R. Mercer, Fort Wayne, Ind.; Herman Beerman, Philadelphia; F. A. Ellis, Baltimore; Hamilton Montgomery, Rochester, Minn., and H. N. Cole Jr., Cleveland.

## SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

### Wednesday, June 8—Morning

The meeting was called to order at 9 a. m. by the chairman, Dr. Oscar A. Sander, Milwaukee.

In introducing a Symposium on Air Pollution (Smog), Dr. W. C. L. Hemeon, Pittsburgh, read a paper on "The Aspects of Smog: (*a*) Chemical; (*b*) Topographic; (*c*) Meteorologic."

Dr. P. L. Magill, Stanford, Calif., presented a paper entitled "An Investigation of Smog in Los Angeles."

A paper entitled "Causes, Constituents and Physical Effects of Smog Involved in Specific, Dramatic Episodes (Donora; Meuse River Valley)," was read by Dr. H. H. Schrenk, Bethesda, Md.

Dr. L. C. McCabe, Los Angeles, presented a paper entitled "Administration of an Air Pollution Control Program."

Dr. Robert A. Kehoe, Cincinnati, summarized the essays.

Discussants of these papers were Drs. Rufus Reeves, Philadelphia; Joseph Shilen, Philadelphia; Francis M. Pottenger, Monrovia, Calif.; William Lewis Jr., New York; John L. Hodges, Philadelphia; C. A. Mills, Cincinnati; James Townsend, Washington, D. C., and John H. Fuulger, Wilmington, Del.

### Thursday, June 9—Morning

The following officers were elected: chairman, Carl N. Neupert, Madison, Wis.; vice chairman, Rutherford T. Johnstone, Los Angeles, and secretary, Gene Felton.

Dr. Oscar A. Sander, Chicago, read a paper entitled "The General Aspects of Pneumoconiosis and Infection."

"The Energetic Theory of Silicosis" was presented by Dr. Silas M. Evans, Milwaukee.

Dr. H. A. Slesinger, Winder, Pa., read a paper entitled "Anthracosilicosis in Bituminous Coal Miners: A Clinical Survey." Discussants were Drs. Arthur Vorwald, Saranac, N. Y., and Frank Princi, Denver.

A paper entitled "Pulmonary Functional Impairment in Anthracosilicosis" was presented by Drs. Hurley L. Motley, Burgess Gordon, Leonard P. Lang and Peter T. Theodos, Philadelphia.

Dr. George A. Wright, Saranac, N. Y., read a paper entitled "Disability Evaluation in Industrial Pulmonary Disease." Discussed by Robert Bruce, Rochester, N. Y., and J. J. Burrascano, New York.

### FRIDAY, JUNE 10—MORNING

Dr. George M. Wheatley, New York, read a paper entitled "Why School Health Service?"

A paper was read by Dr. Hugh R. Leavell, Boston, entitled "Federal Health Services: Recommendations of the Hoover Commission."

Dr. Thomas Francis Jr., Ann Arbor, Mich., read a paper entitled "The Family Doctor: An Epidemiologic Concept."

A paper entitled "The Role of the Physician in Public Health Progress" was read by Dr. Leonard A. Scheele, Washington, D. C.

Dr. Herman E. Hilleboe, Albany, N. Y., presented a paper entitled "The Exact Diagnosis of Pulmonary Tuberculosis."

## SECTION ON UROLOGY

### WEDNESDAY, JUNE 8—MORNING

The meeting was called to order at 9:15 a. m., by the chairman, Dr. Hamilton W. McKay, Charlotte, N. C.

In the unavoidable absence of Dr. Reed M. Nesbit, Ann Arbor, Mich., the chairman appointed Dr. William Herbst, Washington, D. C., to serve on the executive committee.

The following papers were presented:

"Leukoplakia of the Renal Pelvis," by Dr. Lowrain E. McCrea, Philadelphia.

"Papillary Necrosis of the Kidney: A Clinical and Experimental Correlation," by Dr. E. E. Muirhead, Dallas, Texas.

"Observations on the Electrolyte Pattern of the Blood Following Bilateral Ureterointestinal Anastomosis," by Drs. D. O. Ferris and H. M. Odel, Rochester, Minn.

These three papers were discussed by Drs. Hugh J. Jewett, Baltimore; Victor F. Marshall, New York; Franklin Farman, Whittier, Calif.; Rubin Flocks, Iowa City; Lowrain E. McCrea, Philadelphia; E. E. Muirhead, Dallas, Texas, and H. M. Odel, Rochester, Minn.

Drs. James C. Kimbrough and Joseph C. Denslow, Washington, D. C., presented a paper on "Urinary Tract Calculi in Recumbent Patients."

Dr. David S. Cristol, Philadelphia, read a paper entitled "Radioactive Urine and Urinary Tract Calculi."

Discussion on papers of Drs. Kimbrough and Denslow and Dr. Cristol by Drs. Rubin Flocks, Iowa City; John F. McCuskey, Clarksburg, W. Va.; Henry Sangree, Philadelphia; James C. Kimbrough, Washington, D. C., and David S. Cristol, Philadelphia.

Dr. Grayson Carroll, St. Louis, presented a paper on "Gantrosan (NU-445): An in Vitro and in Vivo Study in Urinary Infections."

Dr. J. Robert Rinker, Augusta, Ga., read a paper on "The Effect of Streptomycin on the Tuberculous Ureter."

The papers of Drs. Carroll and Rinker were discussed by Drs. E. Craig Coats, New York; Louis C. Roberts, Durham, N. C.; Seymour Wilhelm, New York; Edward Cook, Rochester, Minn.; Wm. Herbst, Washington, D. C.; Ralph H. Jenkins, New Haven, Conn.; Grayson Carroll, St. Louis, and J. Robert Rinker, Augusta, Ga.

### THURSDAY, JUNE 9—MORNING

Dr. A. I. Dodson, Richmond, Va., read the report of the activities of the American Board of Urology, which was received and filed.

The following officers were elected: chairman, Dr. Edward N. Cook, Rochester, Minn. (1 year); vice chairman, Dr. Hugh J. Jewett, Baltimore (1 year); secretary, Earl E. Ewert, Boston (3 years); delegate, Dr. Jay J. Crane, Los Angeles (1 year); alternate, Dr. Rex Van Dusen, Dallas, Texas (1 year); representatives on Scientific Exhibits, Drs. John H. Morrissey, New York (1 year); Roger W. Barnes, Los Angeles (1 year), and Wm. W. Scott, Baltimore (1 year); executive committee, Drs. Reed M. Nesbit, Ann Arbor, Mich. (1 year); Hamilton W. McKay, Charlotte, N. C. (2 years), and Edward N. Cook, Rochester, Minn. (3 years).

The members stood in silent tribute to the memory of Dr. Roy B. Henline, New York, recently deceased.

The following papers were presented:

"Excretory Urography Versus Retrograde Urography: Their Respective Advantages and Indications, with Illustrated Cases, by Drs. J. Byron Beare and Carl A. Wattenberg, St. Louis.

"Significant Scrotal Swellings", by Dr. R. Theodore Berman, Los Angeles.

The papers of Drs. Beare and Wattenberg were discussed by Drs. Walter M. Kearns, Milwaukee; Monroe Wolf, New Orleans; James C. Kimbrough, Washington, D. C.; J. Byron Beare, St. Louis, and R. Theodore Bergman, Los Angeles.

Drs. Waltman Walters and Randall G. Sprague, Rochester, Minn., presented a paper entitled "Physiologic and Chemical Changes Associated with Hyperfunctioning Tumors of the Suprarenal Cortex." Discussed by Drs. M. M. Melicow, New York; Hugh J. Jewett, Baltimore, and Waltman Walters, Rochester, Minn.

Dr. Hamilton W. McKay, Charlotte, N. C., read the chairman's address.

The following papers were presented:

"Analysis of the Treatment of Bladder Tumors," by Drs. W. Calhoun Stirling and J. E. Ash, Washington, D. C.

"Papillomas of the Bladder," by Drs. Herman L. Kretschmer and Edward A. Stika, Chicago.

"Vesical Neoplasms of the Female Bladder: A Suggested Surgical Technic," by Drs. J. Sydney Ritter and Leo A. Shifrin, New York.

The papers of Drs. Stirling and Ash, Drs. Kretschmer and Stika, and Drs. Ritter and Shifrin were discussed by Drs. Ernest Rupel, Indianapolis; Thomas J. Kirwin, New York; G. J. Thompson, Rochester, Minn.; David Worgan, Washington, D. C.; M. M. Melicow, New York; W. Calhoun Stirling, Washington, D. C.; Herman L. Kretschmer, Chicago, and Leo A. Shifrin, New York.

### FRIDAY, JUNE 10—MORNING

A panel discussion was conducted with the following participants answering questions that had previously been submitted: Drs. R. H. Flocks, Iowa City; Rex Van Dusen, Dallas, Texas; Jay J. Crane, Los Angeles, and William W. Scott, Baltimore, with Dr. G. J. Thompson, Rochester, Minn., acting as moderator.

The following papers were presented:

"Prostatic Cancer: Further Investigation of Hormonal Relationships," by Drs. Herbert Brendler, W. E. Chase and William W. Scott, Baltimore.

"Carcinoma of the Prostate Gland: Results with Conservative Management," by Drs. Lloyd R. Reynolds, Thomas L. Schulte and Howard J. Hammer, San Francisco.

"Carcinoma of the Prostate: Review of 150 Cases," by Dr. William Baurys, Sayre, Pa.

The papers of Drs. Brendler, Chase and Scott, Drs. Reynolds, Schulte and Hammer and Dr. Baurys were discussed by Drs. S. W. Mulholland, Philadelphia; William Herbst, Washington, D. C.; G. J. Thompson, Rochester, Minn.; Ernest F. Hock, Binghamton, New York; Herbert Brendler, Baltimore; Lloyd R. Reynolds, San Francisco, and William Baurys, Sayre, Pa.

The following papers were presented:

"Postoperative Urinary Incontinence," by Dr. Edwin Davis, Omaha.

"The Technic for Immediate Diagnosis and Management of Vesical or Urethral Perforations in the Course of Transurethral Procedures," by Dr. Herbert R. Kenyon, New York.

"Problems Associated with Transurethral Relief of Bladder Neck Obstruction," by Dr. John H. Dougherty, Knoxville, Tenn.

The papers of Drs. Davis, Kenyon and Dougherty were discussed by Drs. Dean Makowski, New York; T. A. Morrissey, New York; David M. Davis, Philadelphia; Leon Herman, Philadelphia; Ernest F. Hock, Binghamton, N. Y.; Ralph H. Jenkins, New Haven, Conn.; Herbert R. Kenyon, New York, and John H. Dougherty, Knoxville, Tenn.

## SECTION ON ORTHOPEDIC SURGERY

### Wednesday, June 8—Morning

The meeting was called to order at 9 a. m. by the chairman, Dr. David M. Bosworth, New York.

Drs. Steven M. Horvath and Joseph L. Hollander, Philadelphia, presented a paper on "The Effect of Vasodilating and Vasoconstricting Drugs on the Temperature of Joints and Related Structures." Discussed by Drs. A. R. Shands Jr., Wilmington, Del.; Paul C. Colonna, Philadelphia, and Steven M. Horvath, Philadelphia.

Mr. Douglas H. Collins, Leeds, England, read a paper on "The Pathologic Distinction Between Osteoarthritis and Osteophytosis of the Spine with a Note on the Morbid Anatomy of Ankylosing Spondylitis." Discussed by Drs. Robert P. Kelly Jr., Atlanta, Ga.; Edward L. Compere, Chicago; Gerry Hough, Springfield, Mass.; Lenox D. Baker, Durham, N. C.; Lee A. Hadley, Syracuse, N. Y.; David M. Bosworth, New York, and Douglas H. Collins, Leeds, England.

Drs. Paul Strassburger, C. Zent Garber and Halford Hallock, New York, presented a paper on "Fibrous Dysplasia of Bone." Discussed by Drs. C. Glenn Barber, Cleveland; Douglas H. Collins, Leeds, England, and Paul Strassburger, New York.

Drs. Charles F. Geschickter and Murray M. Copeland, Washington, D. C., presented a paper on "Parosteal Osteoma or Myo-Osseous Osteoma." Discussed by Drs. H. L. Jaffe, New York; Albert B. Ferguson, Boston; H. R. McCarroll, St. Louis, and Charles F. Geschickter, Washington, D. C.

Dr. Allen S. Lloyd, Washington, D. C., read a paper on "Irritation of the Tibial and Peroneal Nerves as an Unrecognized Cause of Knee Pain." Discussed by Drs. I. W. Nachlas, Baltimore; Julius S. Neviaser, Washington, D. C., and Allen S. Lloyd, Washington, D. C.

Dr. Edwin David Weinberg, Baltimore, read a paper on "The Spontaneous Rupture of the Extensor Pollicis Longus Tendon Following Colles' Fracture." Discussed by Drs. Henry F. Ullrich, Baltimore; Herbert C. Fett, Brooklyn, and Edwin David Weinberg, Baltimore.

### Thursday, June 9—Morning

The following officers were elected: chairman, Dr. Joseph S. Barr, Boston; vice chairman, Dr. Walter P. Blount, Milwaukee; secretary, Dr. Charles N. Pease; for nomination to the American Board of Orthopedic Surgery, Dr. William T. Green, Boston, and Dr. Carl E. Badgley, Ann Arbor.

On motion duly made and seconded, it was voted that a committee be appointed to make suggestions to the American Medical Association for revision of the rules of the section and report at the next meeting. The committee thus appointed consisted of Edward L. Compere, Chicago; William Tobin, Washington, D. C., and Paul C. Colonna, Philadelphia.

Dr. Dana M. Street, Memphis, Tenn., read a paper on "Medullary Nailing: A Comparative Study of Skeletal Traction, Dual Plating and Medullary Nailing." Discussed by Drs. G. O. Eaton, Baltimore; Leslie V. Rush, Meridian, Miss.; J. Warren White, Greenville, S. C., and Dana M. Street, Memphis, Tenn.

Dr. David M. Bosworth, New York, read the chairman's address, entitled "Blade Plate Fixation for Fractures of the Surgical Neck of the Humerus and Similar Lesions."

Drs. J. G. Petrie and William V. Cone, Montreal, Canada, presented a paper on "The Treatment of Fracture Dislocation of the Spine by Open Reduction and Internal Fixation." Discussed by Drs. E. F. Cave, Boston; Frank E. Stinchfield, New York, and J. G. Petrie, Montreal.

Dr. Frederick M. Smith, New York, read a paper on "Injuries of the Medial Epicondyle of the Humerus." Discussed by Drs. Leonard T. Peterson, Washington, D. C.; Maurice M. Pile, Hartford, Conn.; Walter P. Blount, Milwaukee; Harold R. Bowman, Baltimore, and Frederick M. Smith, New York.

Dr. Albert B. Ferguson, Boston, read a paper on "Roentgenographic Union of Bone Fragments. Discussed by Drs. Lenox D. Baker, Durham, N. C.; Ralph S. Bromer, Bryn Mawr, Pa.; J. Warren White, Greenville, S. C., and Albert B. Ferguson, Boston.

### Friday, June 10—Morning

Dr. Robert Leland Maynard, Burlington, Vt., read a paper on "A Summary of the Ski Fractures in the Stowe, Vt., Area for the Past Five Years." Discussed by Drs. Kenneth Christophe, Brookline, Mass.; John Royal Moore, Philadelphia, and Dr. Robert Leland Maynard, Burlington, Vt.

Drs. Mark B. Coventry, John C. Ivins, L. A. Weed and D. R. Nichols, Rochester, Minn., presented a paper on "Infection of the Hip Joint by Brucella Suis." Discussed by Drs. R. Beverly Raney, Durham, N. C.; A. Bruce Gill, Philadelphia, and Mark B. Coventry, Rochester, Minn.

Dr. Jesse T. Nicholson, Philadelphia, read a paper on "Pyogenic Arthritis of the Hip in Infants." Discussed by Drs. Henry B. Crawford, Rochester, N. Y.; John A. Heberling, Pittsburgh; Joseph S. Barr, Boston; David M. Bosworth, New York; Whitfield Larrabee, Hartford, Conn.; Alan DeF. Smith, New York; Philip Lewin, Chicago; A. Bruce Gill, Philadelphia; Paul Hugenberger, Boston, and Jesse T. Nicholson, Philadelphia.

Drs. Edward L. Compere and William J. Schnute, Chicago, presented a paper on "Treatment of Congenital Dislocation of the Hip Without Open Surgery." Discussed by Drs. Walter P. Blount, Milwaukee; J. Warren White, Greenville, S. C.; G. DeN. Hough, Springfield, Mass.; Paul Colonna, Philadelphia; Vernon P. Hart, Minneapolis; A. Bruce Gill, Philadelphia; Oscar LeClercq, Brussels, Belgium, and Edward L. Compere, Chicago.

Drs. Donald W. McCormick and Walter P. Blount, Milwaukee, presented a paper on "Metatarsus Adductus More Prevalent Than Clubfoot." Discussed by Drs. Philip Lewin, Chicago; Charles W. Peabody, Detroit, and Walter P. Blount, Milwaukee.

Drs. Alan DeF. Smith and Horace I. Yu, New York, presented a paper on "Streptomycin Combined with Surgery in the Treatment of Bone and Joint Tuberculosis." Discussed by Drs. Charles N. Pease, Chicago; Paul W. Hugenberger, Boston; Timothy C. H. Liang, Cassadago, N. Y.; David M. Bosworth, New York, and Alan DeF. Smith, New York.

## SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

### Wednesday, June 8—Afternoon

The meeting was called to order at 2 p. m. by the chairman, Dr. William H. Daniel, Los Angeles.

Dr. Edwin Boros, New York, read a paper on "The Role of the Esophagus in Local and Systemic Disease." Discussed by Drs. Moses Paulson, Baltimore; Edward B. Benedict, Boston; John Tilden Howard, Baltimore; Philip Thorek, Chicago; Hyman I. Goldstein, Camden, and Edwin Boros, New York.

Drs. Samuel A. Wilkinson Jr. and Martin L. Tracey, Boston, presented a paper on "History of Hemorrhage in Ulcer." Discussed by Drs. Donovan C. Browne, New Orleans; Samuel Marshall, Boston; Meyer A. Rabinowitz, Brooklyn, and Samuel A. Wilkinson Jr., Boston.

Dr. Mandred W. Comfort, Rochester, Minn., read a paper on "Gastric Acidity Before and After Development of Gastric Cancer: Diagnostic and Prognostic Significance." Discussed by Drs. Leon Schiff, Cincinnati; Arthur J. Atkinson, Chicago; Frederick W. Mulsow, Cedar Rapids, Iowa; Hyman I. Goldstein, Camden, N. J.; Joseph B. Kirsner, Chicago, and Mandred W. Comfort, Rochester, Minn.

Drs. Otto C. Pickhardt and Henry A. Rafsky, New York, presented a paper on "The Treatment of Hiatus Hernia in Older People." Discussed by Drs. Irving B. Brick, Washington, D. C.; Herbert Caisle Maier, New York; Barney J. Dryfuss, New York; Henry A. Rafsky, New York, and Otto C. Pickhardt, New York.

Drs. Harry Shay, S. A. Komarov and J. Edward Berk, Philadelphia, presented a paper on "Some Fallacies in the Clinical Measurement of Gastric Acidity with Special Reference to the Histamine Test." Discussed by Drs. H. L. Bockus, Philadelphia; Franklin Hollander, New York, and Harry Shay, Philadelphia.

Drs. C. W. Wirts and M. H. F. Friedman, Philadelphia, presented a paper on "The Use of Orally Administered Intestinal Extracts in the Treatment of Peptic Ulcer." Discussed by Drs. David J. Sandweiss, Detroit; H. Marvin Pollard, Ann Arbor, Mich.; Z. T. Bercovitz, New York, and M. H. F. Friedman, Philadelphia.

Drs. Stanley O. Hoerr, William R. Bliss and James Kauffman, Columbus, Ohio, presented a paper on "A Clinical Evaluation of Various Tests for Occult Blood in the Feces." Discussed by Drs. J. Edward Berk, Philadelphia, and Stanley O. Hoerr, Columbus, Ohio.

Drs. Harold Lincoln Thompson and DeVere W. McGuffin, Los Angeles, presented a paper on "Melena," Discussed by Drs. Z. T. Bercovitz, New York; John E. Dunphy, Boston; H. Necheles, Chicago; DeVere W. McGuffin, Los Angeles, and Harold Lincoln Thompson.

Dr. John H. Fitzgibbon, Portland, Ore., read a paper on "The Diagnosis of Lesions Near the Cardia." Discussed by Drs. Russell S. Boles, Philadelphia; A. H. Aaron, Buffalo; Edwin Boros, New York, and John H. Fitzgibbon, Portland, Ore.

### THURSDAY, JUNE 9—2 P. M.

The following officers were elected: chairman, Dr. Russell S. Boles, Philadelphia; vice chairman, Dr. N. G. Runyeon, Reading, Pa.; secretary, Dr. Donovan C. Browne, New Orleans; delegate, Dr. Louis A. Brice, Rochester, Minn.; alternate delegate, Dr. Walter A. Jansler, Minneapolis; co-chairmen of Scientific Exhibits, Dr. Everett D. Kieffer, Boston, and Dr. J. P. Nesselrod, Evanston, Ill.

On motion regularly made and seconded, it was voted unanimously to accept the recommendation of the Advisory Board for Medical Specialties and of the directors of the American Board of Proctology concerning changes in the rules of the American Board of Proctology.

Dr. William H. Daniel, Los Angeles, read the chairman's address on "Obstructive Lesions of the Left Colon and Rectum."

Drs. Samuel McLanahan, Glenn P. Grove and Richard F. Kieffer Jr., Baltimore, presented a paper on "An Evaluation of Conservative Surgery for Certain Rectal Adenomas Showing Malignant Change." Discussed by Dr. Harvey B. Stone, Baltimore, and Dr. Martin S. Kleckner, Allentown, Pa.

Dr. J. M. Ravid, New York, presented a paper on "Diastasis and Diastatic Perforation of the Gastrointestinal Tract: A Clinical Pathologic and Experimental Study." Discussed by Drs. James P. Croce and Con Amore V. Burt, New York.

Drs. Michael H. Streicher and Morton I. Grossman, Chicago, presented a paper on "The Use of Duodenal Substance in the Treatment of Chronic Ulcerative Colitis." Discussed by Drs. Burrill B. Chrohn, New York; Joseph B. Kirsner, Chicago; B. F. Haskell, Philadelphia, and Everett D. Kiefer, Boston.

Drs. J. A. Bargen and William G. Sauer, Rochester, Minn., presented a paper on "The Association of Chronic Ulcerative Colitis and Carcinoma." Discussed by Drs. Frank Lahey, Boston; Joseph D. Kirsner, Chicago; Anthony Bassler, New York, and J. Arnold Bargen, Rochester, Minn.

Drs. W. W. Babcock and Harry E. Bacon, Philadelphia, presented a paper "An Appraisal of Over 1,000 Operations for Carcinoma of the Large Bowel, with Special Reference to Those Without Abdominal Colostomy." Discussed by Drs. Lawrence Abel, London, England, and Louis E. Moon, Omaha.

Drs. William J. Grace, Stewart G. Wolf Jr. and Harold Wolff, New York, presented a paper on "Changes in Human Colonic Functions During Various Emotions and Feeling States: An Experimental Study." Discussed by Drs. Thomas P. Almy, New York; Asher Winkelstein, New York, and Sidney Portis, Chicago.

Drs. William P. Chapman, Eirwyn N. Rowlands and Chester M. Jones, Boston, presented a paper on "Multiple Balloon Kymographic Recordings of the Comparative Action of Various Drugs on the Motility of the Upper Small Intestine in Man." Discussed by Dr. Franz J. Ingelfinger, Boston.

## SECTION ON RADIOLOGY

### WEDNESDAY, JUNE 8—AFTERNOON

The meeting was called to order at 2:15 p. m. by the chairman, Dr. Harry M. Weber, Rochester, Minn.

Dr. Harry M. Weber, Rochester, Minn., read a paper, "The Significance of the Intestinal Polypoid Lesion."

Drs. Irving B. Brick and Harold I. Amory, Washington, D. C., presented a paper, "Incidence of Hiatus Hernia in Patients without Symptoms." Discussed by Drs. L. G. Rigler, Minneapolis; R. R. Newell, San Francisco, and Irving B. Brick.

Dr. Gerhart S. Schwarz, Clifton Springs, N. Y., read a paper, "X-Ray Differentiation Between Benign and Malignant Gastric Lesions." Discussed by Drs. L. G. Rigler, Minneapolis; Reid R. Heffner, New Rochelle, N. Y.; R. R. Newell, San Francisco, and Gerhart S. Schwarz.

Dr. Philip J. Hodes, Philadelphia, read a paper, "Roentgen Manifestations of Small Intestinal Bleeding." Discussed by Drs. Arthur Finkelstein, Jonathan Rhoads, and Philip J. Hodes, Philadelphia.

Drs. John F. Roach, Robert D. Sloan and Russell H. Morgan, Baltimore, presented a paper, "Photofluorography in the Early Detection of Gastric Malignancy." Discussed by Drs. Paul C. Hodges, Chicago; Moses Paulson, Baltimore; L. G. Rigler, Minneapolis, and John F. Roach.

Dr. Frank S. Windholz, San Francisco, presented a paper "Fractional Air Contrast: Barium Enema for Demonstration of Lesions in the Lower Sigmoid." Discussed by Drs. Harry M. Weber, Rochester, Minn.; R. R. Newell, San Francisco, and Frank S. Windholz.

### THURSDAY, JUNE 9—AFTERNOON

The meeting was called to order at 2:15 p. m. by the chairman, Dr. Harry M. Weber, Rochester, Minn.

It was moved and carried that the minutes of the last meeting, as published in THE JOURNAL, be officially adopted.

Dr. Sydney J. Hawley, Seattle, secretary of the Pacific Northwest Radiological Society, forwarded a communication incorporating a resolution, to the effect that the Pacific Northwest Radiological Society goes on record as most strongly opposing the proposed Blue Cross-Blue Shield, national health insurance plan, and requesting that word to that effect be transmitted to all the delegates of the American Medical Association and all the radiologic societies of the United States.

It was moved and carried that the secretary cast a unanimous ballot for the election of Dr. U. V. Portmann, Cleveland, as chairman, and Dr. J. C. Dickson, Tampa, Fla., as vice chairman of the Section on Radiology.

Dr. Fred J. Hodges, Ann Arbor, Mich., assumed the chairmanship.

Dr. Barton R. Young, Philadelphia, read a paper on "Important X-Ray Aspects of the Cranial Vault."

Dr. Merrill C. Sosman, Boston, read a paper on "Important X-Ray Aspects of Intracranial Structures."

Dr. Lewis E. Etter, Warrendale, Pa., read a paper on "Cranial Fracture."

These three papers were discussed by Drs. Donald D. Matson, Boston; John F. Holt, Ann Arbor, Mich.; A. W. Marcovich, Dayton, Ohio; Rudolph Jaeger, Philadelphia; Frank Windholz, San Francisco; Merrill C. Sosman, Boston, and Lewis E. Etter, Warrendale, Pa.

Dr. Robert P. Barden, Philadelphia, read a paper on "Encephalography."

Dr. Fred J. Hodges, Ann Arbor, Mich., read a paper on "Ventriculography."

Dr. C. R. Perryman, Baton Rouge, La., read a paper on "Cerebral Angiography."

These three papers were discussed by Drs. Robert C. Bassett, Ann Arbor, Mich.; J. A. Campbell, Indianapolis; John W. Turner, Springfield, Mass., and Fred J. Hodges, Ann Arbor, Mich.

### Friday, June 10—Afternoon

Drs. Wendell G. Scott and Sherwood Moore, St. Louis, presented a paper on "Advances in Cardiovascular Angiography and Aortography as Applied to the Diagnosis of Congenital Heart Disease." Discussed by Drs. Russell H. Morgan, Baltimore; Fred J. Hodges, Ann Arbor, and Wendell G. Scott, St. Louis.

Drs. Jack Lasner, Claude Snead and E. L. Jenkinson, Chicago, presented a paper on "Roentgen Therapy of Thrombophlebitis." Discussed by Dr. Geza de Takats, Chicago.

Drs. George S. Sharp and Herbert F. Williams, Pasadena, Calif., presented a paper on "Irradiation as the Preferred Treatment for Cancer of the Lip.". Discussed by Drs. Charles Martin, Dallas, Texas, and George S. Sharp, Pasadena.

Dr. Max Cutler, Chicago, read a paper on "The Treatment of Early Cancer of the Larynx." Discussed by Drs. John V. Blady, Philadelphia; H. B. Phillips, New York; Theodore P. Eberhard, Philadelphia; Maurice Lenz, New York, and Max Cutler, Chicago.

Dr. H. Marks, New York, read a paper on "Clinical Experience with Irradiation Through a Grid." Discussed by Drs. Maurice Lenz, New York; David E. Ehrlich, Brooklyn, and H. Marks, New York.

Dr. Anna Goldfeder, New York, read a paper on "Relative Radiosensitivities of Analogous Mammary Tumors." Discussed by Drs. Maurice Lenz, New York; Frederick P. Ellinger, Bethesda, Md., and Anna Goldfeder, New York.

The meeting adjourned at 4:40 p. m.

## SECTION ON ANESTHESIOLOGY

### Wednesday, June 8—Morning

The section was called to order at 9:15 a. m. by the chairman, Dr. C. Walter Metz, Denver.

Dr. H. S. Ruth, Haverford, Pa., section delegate to House of Delegates, gave the following report:

Mr. Chairman, Members of the Section, Guests: I shall confine my brief remarks to those matters which I believe to be of the greatest interest to the members of this section. There are, essentially, two items. The first has to do with the new code of ethics which was presented by the Judicial Council to the House on Monday, and which was passed with a change of only one word, from the form in which it was originally presented.

In the new code of ethics I believe there are two sections, as you will receive it later, and which will be of interest to you, and possibly helpful to you. The first section states briefly, "A physician should not dispose of his services under conditions that make it impossible to render adequate service to his patients, with the exception of an emergency."

The second section is very similar to a portion of the original code of ethics as reported for a number of years, with the addition of the word "hospital." "A physician should not dispose of his professional attainments or services to any hospital . . ." and then the other portions which have been in there ". . . under terms or conditions which permit exploitation of the services of the physician for the financial profit of the agency concerned."

The second item of interest to you, I believe, is the report of the so-called Hess Committee, which is the committee on hospitals and the practice of medicine. We believe that, essentially, this should be directed toward one of our great problems in the specialty.

The Hess Committee's recommendations have been prepared in mimeographed form and referred to the reference committee, which is studying it. They will report back to the House tomorrow.

We made two appearances yesterday in reference to the Hess Report, and I should like to thank those members of our section who were sufficiently interested to appear with us. In addition, we had the cooperation of two or three other sections specialties. This discussion will be continued before the reference committee at 10 a. m.

From our activities we hope to bring back certain amendments and changes to be submitted to the reference committee, so that the reference committee will recommend these changes to the House of Delegates tomorrow morning. We think that these changes will further strengthen the report and make the directives in the report more workable for our specialty.

I will not take up any more of your time at the moment, but until approximately 9:30 a. m. I will be in the room and I will be happy to answer any questions that any of you might have on the work of the House of Delegates in respect to the Section on Anesthesiology.

Dr. C. Walter Metz, Denver, reported that the request for the appropriation to conduct a survey of operating room deaths was disallowed.

Dr. Charles D. Anderson, Chicago, presented the following resolution:

Whereas, The House of Delegates previously approved the formation of study commissions in county and state Medical Societies, but no model exists except one in Philadelphia and perhaps one elsewhere, therefore be it

*Resolved*, That the Section on Anesthesiology request the House of Delegates to appropriate $450 for the printing of forms, for postage and so on, for the purpose of making a study to report deaths in operating rooms.

The motion was seconded by Dr. Paul Wood, New York, was put to a vote and was carried.

Dr. Charles D. Anderson, Chicago, read a paper on "Pentothal®-Curare Anesthesia in Upper Abdominal Surgery."

Drs. V. K. Stoelting and J. P. Graf, Indianapolis, presented a paper on "Dimethyl Ether of d-Tubocurarine Iodide as an Adjunct to Anesthesia."

Drs. H. J. Daly and S. V. Marshall, Sydney, Australia, presented a paper on "Experience with Relaxants during Anesthesia in Australia."

Dr. Geoffrey Organe, London, England, read his paper on "The Use in Anesthesia of a New Synthetic Curarizing Agent."

Drs. Harold R. Griffith, Montreal, Canada; Stuart C. Cullen, Iowa City; W. D. M. Paton, London, England; K. K. Chen, Indianapolis; Charles D. Anderson, Chicago; J. P. Graf, Indianapolis; H. J. Daly, Sydney, Australia, and Geoffrey Organe, London, England, discussed these papers.

Drs. Ivan B. Taylor, Gerald Edmonds and Walter H. Comer, Detroit, presented a paper, "Intravenous Procaine Hydrochloride During General Anesthesia."

Drs. Harold E. Godman and John Adriani, New Orleans, presented a paper, "Some Clinical Experiences with Various Muscle Relaxing Agents in the Management of Patients with Tetanus."

Drs. David J. Graubard, New York, and Milton C. Peterson, Kansas City, Mo., presented a paper, "The Use of Intravenous Procaine in the Management of Arthritis."

Drs. Julia G. Arrowood, Boston; Stevens J. Martin, Hartford, Conn.; George J. Boines, Wilmington, Del.; Norbert M. Bittrich, Detroit; Ivan B. Taylor, Detroit; F. F. Foldes, Pittsburgh; Harold E. Godman, New Orleans, and David J. Graubard, New York, discussed these papers.

### Thursday, June 9—Morning

The meeting was called to order at 9:10 a. m. by the chairman, Dr. C. Walter Metz, Denver.

Dr. C. Walter Metz, Denver, read letter from Dr. Harold Bishop, Valhalla, N. Y., requesting that his name not be considered for reappointment as representative of the Scientific Exhibit.

Dr. John S. Lundy, Rochester, Minn., read letter of thanks sent to Dr. Harold Bishop, Valhalla, N. Y., for past services.

Dr. Scott M. Smith, Salt Lake City, was elected to fill the post vacated by Dr. Harold Bishop, Valhalla, N. Y., as representative of Scientific Exhibits.

Dr. C. Walter Metz, Denver, read By-Laws pertaining to eligibility for voting, and appointed Drs. Lewis H. Wright, Great Neck, N. Y.; R. S. McKee, Leavenworth, Kan., and R. J. Whitacre, Cleveland, as tellers.

Since the terms of Drs. John S. Lundy, Rochester, Minn., and Henry S. Ruth, Haverford, Pa., were expiring, the following members were elected from the floor, their names to go for nomination to the American Board of Anesthesiology: for Dr. John S. Lundy's, Rochester, Minn., vacancy; Dr. Stuart C. Cullen, Iowa City; Dr. Ivan B. Taylor, Detroit, and Dr. Perry P. Volpitto, Augusta, Ga.; for Dr. Henry S. Ruth's, Haverford, Pa., vacancy, Dr. Robert Patterson, Pittsburgh; Dr. Stevens J. Martin, Hartford, Conn., and Dr. Scott M. Smith, Salt Lake City.

Dr. John S. Lundy, Rochester, Minn., was elected secretary for a term of three years.

Dr. Scott M. Smith, Salt Lake City, was elected vice chairman for a term of one year.

Dr. Fred Clement, Toledo, Ohio, was elected chairman for a term of one year.

Commander James G. Kurfees, Lieutenant Scott Whitehouse, and Lieutenant Frank Cerzosimo, U. S. Navy Medical Corps, presented a paper on "Anesthesia for the Paraplegic." Discussed by Drs. Lewis H. Wright, Great Neck, N. Y., and Dwight D. Grove, Philadelphia.

Drs. Perry P. Volpitto and John M. Brown, Augusta, Ga., presented a paper on "The Choice of Anesthesia in Patients with Emphysema." Discussed by Drs. Irving R. Hayman, Paterson, N. J.; R. Douglas Sanders, Wilmington, Del., and Perry P. Volpitto, Augusta, Ga.

Major Walter L. Lumpkin and Colonel James H. Forsee, U. S. Army Medical Corps, presented a paper on "The Use of Sodium Pentothal® and Local Procaine Anesthesia in Extrapleural Thoracoplasty in the Treatment of Pulmonary Tuberculosis." Discussed by Lieutenant Colonel Charles H. Mitchell, U. S. Army Medical Corps; Dr. M. Gene Black, Holyoke, Mass., and Major Walter L. Lumpkin, U. S. Army Medical Corps.

Dr. C. Walter Metz, Denver, presented a paper on "Anesthesia, Past and Present," which was the chairman's address.

Drs. Clarence L. Hebert, Staten Island, N. Y.; Carl E. Tetirick, Columbus, Ohio, and Joseph F. Ziemba, Staten Island, N. Y., presented a paper on "Complications of Spinal Anesthesia: An Evaluation of Complications Encountered in 7,000 Patients." Discussed by Lieutenant Colonel John Gardiner, U. S. Army Medical Corps; Drs. Meyer Saklad, Providence, R. I.; Foster Kennedy, New York; Allen Conroy, Chicago; Irving R. Hayman, Paterson, N. J.; Katzman, Washington, D. C.; Ernest A. Doud, San Diego, and Carl E. Tetirick, Columbus, Ohio.

Dr. Foster Kennedy, New York, requested an opportunity to speak twice. A vote was taken from the floor and, the members not being unanimously in favor of it, his request was denied.

Dr. Thomas H. Seldon, Rochester, Minn., presented a paper on "Supportive Therapy During Anesthesia and Operation." Discussed by Drs. Donald E. Hale, Cleveland; F. Woodbridge, Reading, Pa.; P. Lief, Denver, and Thomas H. Seldon, Rochester, Minn.

## JOINT MEETING ON SECTIONS OF ANESTHESIOLOGY AND SURGERY, GENERAL AND ABDOMINAL

FRIDAY, JUNE 10—MORNING

The meeting was called to order at 9:10 a. m. by the chairman, Dr. C. Walter Metz, Denver.

In the unavoidable absence of Dr. Frederick P. Haugen, Portland, Ore., Dr. Henry S. Ruth, Haverford, Pa., presented Dr. Haugen's paper on "Report of the Committee on Operative Mortality." Discussed by Drs. Roland Whitacre, Cleveland; Ambrose H. Storck, New Orleans; Geoffrey Organe, London, England, and Dr. Henry S. Ruth, Haverford, Pa.

Drs. F. A. Duncan Alexander and Carroll E. Kern, McKinney, Texas, and T. McD. Anderson, Dallas, Texas, presented a paper on "Management of Pain." Discussed by Drs. Henry S. Ruth, Haverford, Pa.; Sedgwick Mead, St. Louis; Robert A. Ravich, Brooklyn, and F. A. Duncan Alexander, McKinney, Texas.

Dr. Lloyd H. Mousel, Washington, D. C., read a paper on "Cyclopropane Anesthesia." Discussed by Drs. Robert D. Dripps, Philadelphia; Frank B. Berry, New York, and Lloyd H. Mousel, Washington, D. C.

Dr. William F. MacFee, New York, assumed the chairmanship.

Dr. Claude S. Beck and Mr. H. J. Rand III, Cleveland, presented a paper and motion film on "Cardiac Arrest During Anesthesia and Surgery." Discussed by Drs. Thomas J. Dry, Rochester, Minn.; Robert B. Orr, Lahey Clinic, Boston; John W. Devine Jr., Lynchburg, Va.; H. A. Gamble, Greenville, Miss., and S. L. Lieberman, Buffalo, and Mr. H. J. Rand III, Cleveland.

Dr. John C. Jones, Los Angeles, read a paper on "Anesthesia in Thoracic Surgery." Discussed by Drs. Charles F. McCuskey, Los Angeles; William Neff, San Francisco, and John C. Jones, Los Angeles.

Dr. C. R. Stephen, Montreal, Canada, read a paper on "Anesthesia in Infants and Young Children for Major Surgical Procedures." Discussed by Drs. Curtiss B. Hickcox, Hartford, Conn., and C. R. Stephen, Montreal, Canada.

## SECTION ON GENERAL PRACTICE

WEDNESDAY, JUNE 8, 1949

The meeting was called to order at 9 a. m. by the chairman, Dr. Winfred B. Harm, Detroit.

Dr. Winfred B. Harm, Detroit, read the chairman's address entitled, "The Place of the General Practitioner in the Cancer Problem."

Dr. David I. Rutledge, Boston, read a paper on "Approach to the Diagnosis of Common Types of Congenital Heart Disase." Discussed by Drs. Allan L. Friedlich, Baltimore; Hyman I. Goldstein, Camden, N. J., and David I. Rutledge, Boston.

Dr. Cyrus C. Sturgis, Ann Arbor, Mich., read a paper on "Recent Advances in the Treatment of Hematologic Disorders." Discussed by Drs. Robert A. Hettig, Houston, Texas; S. M. Goldhamer, Cleveland, and Cyrus C. Sturgis, Ann Arbor, Mich.

Drs. Arthur M. Master, Simon Dack, Leonard Field and Henry Horn, New York, presented a paper on "Diagnosis and Treatment of Acute Coronary Diseases." Discussed by Drs. B. S. Oppenheimer, New York; Hyman I. Goldstein, Camden, N. J., and Arthur M. Master, New York.

Dr. Egmont J. Orbach, New Britain, Conn., read a paper on "Contributions to the Therapy of the Varicose Complex." Discussed by Drs. William M. Cooper, New York; L. Reiner, Belleville, N. J., and Egmont J. Orbach, New Britain, Conn.

Dr. Edward Scott O'Keefe, Lynn, Mass., read a paper on "A High Calory Diet in the Treatment of Diarrhea in Infancy." A number of written questions were handed in and discussed by Dr. O'Keefe.

Dr. Fred W. Wittich, Minneapolis, read a paper on "The Treatment of Allergies as Seen in General Practice." Discussed by Drs. Harold A. Abramson, New York; George E. Rockwell, Milford, Ohio; Myer Solis-Cohen, Philadelphia, and Fred W. Wittich, Minneapolis.

THURSDAY, JUNE 9, 1949

### *Executive Session*

Dr. Paul Davis, delegate to the House of Delegates, gave a brief report of the meeting of the House of Delegates with reference to matters of interest to general practitioners, reporting, in particular, that the Committee to Study the Conditions of General Practitioners had been reactivated.

The following officers were elected: chairman, Dr. Milton B. Casebolt, Kansas City, Mo.; vice chairman, Dr. Lester Bibler, Indianapolis, and secretary, Dr. Thomas E. Robinson, Salt Lake City.

Dr. Richard Mills, Florida, was appointed as the section's representative to the Scientific Exhibits Section.

### *Scientific Session*

Dr. Augustus M. Davison, Hot Springs National Park, Ark., read a paper on "Diagnosis of Osteoarthritis." Discussed by Drs. Charles J. Smyth, Eloise, Mich., and Joseph L. Hollander, Philadelphia.

Drs. Chester H. Adams and Russell L. Cecil, New York, presented a paper on "Results of Gold Therapy in Early Cases of Rheumatoid Arthritis." Discussed by Drs. Ralph H. Boots, New York; William D. Robinson, Ann Arbor, Mich., and Russell L. Cecil, New York.

Dr. Currier McEwen, New York, read a paper on "Diagnosis and Treatment of Rheumatic Rever." Discussed by Drs. Benedict F. Massell, Boston; Eric Bywater, London, England; P. S. Hench, Rochester, Minn., and Currier McEwen, New York.

Dr. George S. Phalen, Cleveland, read a paper on "Diagnosis and Treatment of Mechanical Bachache; the Most Common Type of Low Back Pain." Discussed by Drs. H. Worley Kendall, Chicago; Theodore Potter, Boston, and Janet Travell, New York.

Dr. Ralph L. Gorrell, Clarion, Iowa, read a paper on "The Injection of Analgesic Drugs in the Treatment of Musculofascial Pain." Discussed by Drs. Janet Travell, New York, and Ralph L. Gorrell, Clarion, Iowa.

### Friday, June 10, 1949

Dr. Edward F. McLaughlin, Philadelphia, read a paper on "Hernia in General Practice."

Dr. Reed S. Clegg, Salt Lake City, read a paper on "Newer Concepts of Recognition and Prevention of Congenital Dislocations of the Hip." Discussed by Drs. Vernon Hart, Minneapolis, and Reed S. Clegg, Salt Lake City.

Dr. Fred W. Rankin, Lexington, Ky., read a paper on "The Diagnosis and Treatment of Cancer of the Lower Gastrointestinal Tract." Discussed by Drs. T. E. Jones, Cleveland; R. K. Gilchrist, Chicago, and Fred W. Rankin, Lexington, Ky.

Dr. William C. Roberts, Panama City, Fla., presented a moving picture, "War Surgery: Motion Picture in Color of Front Line Surgery."

Dr. Philip Thorek, Chicago, read a paper on "Jaundice." Discussed by Drs. Elmer C. Texter, Detroit; R. B. Robins, Camden, Ark.; Najib-Farah, Alexandria, Egypt, and Philip Thorek, Chicago.

Dr. Alton Ochsner, New Orleans, read a paper on "Intrathoracic Neoplasia." Discussed by Dr. William F. Rienhoff, Baltimore.

## SECTION ON DISEASES OF THE CHEST

### Wednesday, June 8, 1949

The meeting was called to order at 2:05 p. m. by the chairman, Dr. S. U. Marietta, Washington, D. C.

Dr. S. U. Marietta, Washington, D. C., read the chairman's address.

Drs. H. McLeod Riggins, Harry A. Bray, Ralph Horton, N. Stanley Lincoln and Arthur M. Stokes, New York, presented a paper on "Streptomycin and Dihydrostreptomycin in the Treatment of Tuberculosis." Discussed by Drs. Robert E. Plunkett, Albany, N. Y.; S. A. Waksman, New Brunswick, N. J.; Mourse J. Romansky, Washington, D. C., and H. McLeod Riggins, New York.

Dr. Arthur J. Vorwald, Saranac Lake, N. Y., read a paper on "Individual Variations in the Pulmonary Reaction to Dust." Discussed by Dr. Oscar A. Sander, Milwaukee.

Dr. Edgar M. Medlar, Sunmount, N. Y., read a paper on "What Can Prophylactic Vaccination (BCG) Against Tuberculosis Contribute to the Control of This Disease?" Discussed by Dr. Robert J. Anderson, Washington, D. C., and Dr. Henry C. Sweany, Chicago.

Drs. Herman J. Moersch and John R. McDonald, Rochester, Minn., presented a paper on "Bronchial Adenoma." Discussed by Drs. Porter P. Vinson, Richmond, Va.; Seymour R. Farber, San Francisco (discussion read by Dr. J. Winthrop Peabody, Washington, D. C.); Alfred Goldman, Beverly Hills, Calif., and Herman J. Moersch, Rochester, Minn.

### Thursday, June 9, 1949

### *Executive Session*

The following officers were elected: chairman, Dr. Walter E. Vest, Huntington, W. Va.; vice chairman, Dr. Alvis E. Greer, Houston, Texas; secretary, for three year period, Dr. Jay A. Myers, Minneapolis, Minn.; delegate, Dr. Hollis E. Johnson, Nashville, Tenn.; alternate, Dr. Karl H. Pfentze, Cannon Falls, Minn.

### *Scientific Session*

Dr. Leo G. Rigler, Minneapolis, read a paper on "Limitations of X-Ray Examination in the Diagnosis of Diseases of the Chest." Discussed by Drs. Lawrence L. Robbins, Boston; Philip J. Hodes, Philadelphia; and Leo G. Rigler, Minneapolis.

Dr. Edgar Mayer, New York, read a paper on "Pulmonary Emphysema." Discussed by Drs. Alvan L. Barach, New York, and Maurice S. Segal, Boston.

Dr. Richard H. Overholt, Brookline, Mass., read a paper on "The Silent Phase of Lung Cancer." Discussed by Drs. John E. Dunn, Washington, D. C.; Otto C. Brantigan, Baltimore; Leo G. Rigler, Minneapolis, and Richard H. Overholt, Brookline, Mass.

Drs. David A. Cooper and Katharine R. Boucot, Philadelphia, presented a paper on "A Critical Evaluation of Mass X-Ray Surveys." Discussed by Drs. William Roemmich, Baltimore, and Herman E. Hilleboe, Albany, N. Y.

Dr. David T. Smith, Durham, N. C., read a paper on "Pulmonary Mycosis." Discussed by Dr. Chris J. D. Zarafonetis, Ann Arbor, Mich.

## SECTION ON MISCELLANEOUS TOPICS

### *Session on Physical Medicine and Rehabilitation*

### Wednesday, June 8, 1949

The meeting was called to order at 9 a. m. by the chairman, Dr. Howard A. Rusk, New York.

Dr. Svend Clemmesen, Copenhagen, Denmark, presented a paper on "The Principles of Remedial Exercise."

Drs. Frank H. Krusen, Byron E. Hall and Henry W. Woltman, Rochester, Minn., presented a paper on "Coördination Exercises and Vitamin $B_{12}$ for Combined Degeneration of the Spinal Cord in Pernicious Anemia." Discussed by Drs. Gusta Davidsohn, Chicago, and Byron E. Hall, Rochester, Minn.

Drs. Samuel S. Sverdlik and Howard A. Rusk, New York, presented a paper on "The Rehabilitation of Quadriplegics." Discussed by Drs. Howard Rusk, New York; H. Worley Kendell, Chicago; Nicholas D. Mauriello, Wilkes-Barre, Pa.; H. Burt, London, England; F. M. Schwartz, Birmingham, Ala., and Samuel S. Sverdlik, New York.

Dr. Lewis B. Newman, Hines, Ill., read a paper on "Physical Medicine and Rehabilitation in the Veterans Administration." Discussed by Drs. A. B. C. Knudson, Washington, D. C.; William S. Tegner, London, England; Herbert Kent, New York; Nicholas D. Mauriello, Wilkes-Barre, Pa.; Howard A. Rusk, New York, and Lewis B. Newman, Hines, Ill.

The following papers were read as a panel discussion on "Certain Common Procedures in Physical Medicine and Rehabilitation":

Dr. George G. Deaver, New York: "What Every Physician Should Know About the Teaching of Crutch Walking."

Dr. Sidney Licht, Boston: "What Every Physician Should Know About Occupational Therapy."

Dr. Gordon M. Martin, Rochester, Minn.: "What Every Physician Should Know About Prescribing Physical Therapy."

Dr. George M. Piersol, Philadelphia: "What Every Physician Should Know About the Office Practice of Physical Medicine and Rehabilitation."

Dr. William D. Paul, Iowa City: "What Every Physician Should Know About the Hospital Practice of Physical Medicine and Rehabilitation."

Written questions were presented to the panel members through the moderator, Dr. Howard A. Rusk, New York.

THURSDAY, JUNE 9—MORNING

The meeting was called to order by the chairman, Dr. Howard A. Rusk, New York, at 9 a. m.

Dr. William S. C. Copeman, London, England, presented a paper on "Physical Medicine As Related to Rheumatic Diseases." Discussed by Dr. Frank H. Krusen, Rochester, Minn.

Drs. John S. Coulter, Howard A. Carter and Frederic T. Jung, Chicago, presented a paper on "What the Council on Physical Medicine and Rehabilitation Has to Offer the Physician."

Dr. William S. Tegner, London, England, presented a paper on "Physical Treatment of Common Lesions of the Shoulder." Discussed by Drs. Svend Clemmesen, Copenhagen, Denmark; Bror Troedsson, Orange, N. J.; Nicholas Mauriello, Wilkes-Barre, Pa.; G. Hirschberg, Bronx, N. Y., and Howard A. Rusk, New York.

Dr. William Bierman, New York, presented a paper on "Physical Medicine in Peripheral Vascular Diseases."

The following papers were read as a panel discussion on "Certain Common Indications for Physical Medicine and Rehabilitation."

Dr. Alfred R. Shands Jr., Wilmington, Del.: "What Every Physician Should Know About the Rehabilitation of the Crippled Child."

Dr. Hans Kraus, New York: "What Every Physician Should Know About the Physical Treatment of Backache."

Dr. F. A. Hellebrandt, Richmond, Va.: "What Every Physician Should Know About Physical Medicine and Rehabilitation in Prevention of Chronic Invalidism."

Dr. Robert C. Darling, New York: "What Every Physician Should Know About Physical Fitness."

Dr. Donald A. Covalt, New York: "What Every Physician Should Know About Physical Medicine and Rehabilitation for Industrial Injuries."

Written questions were presented to the panel members through the moderator, Dr. Howard A. Rusk, New York.

### *Session on Allergy*

FRIDAY, JUNE 10—MORNING

The meeting was called to order at 9:10 a. m. by the chairman of the session, Dr. Charles H. Evermann, St. Louis.

Dr. Bret Ratner, New York, read a paper on "Asthma in Children: Salient Diagnostic Problems." Discussed by Drs. James C. Overall, Nashville, Tenn.; Walter Finke, Rochester, N. Y.; Edward O'Keefe, Lynn, Mass., and Bret Ratner, New York.

Dr. Oscar Swineford Jr., Charlottesville, Va., presented a paper on "Observations on the Use of Bacterial Antigens in the Treatment of Asthma: A Brief Critical Review." Discussed by Drs. Frank Perlman, Portland, Ore.; Myer Solis-Cohen, Philadelphia; John Fromer, Boston, and Oscar Swineford Jr., Charlottesville, Va.

Dr. George Piness, Los Angeles, read a paper on "Status Asthmaticus." Discussed by Drs. Maurice S. Segal, Boston; Meyer A. Rabinowitz, Brooklyn; Bert Ratner, New York, and George Piness, Los Angeles.

Drs. Howard J. Lee and T. L. Squier, Milwaukee, presented a paper on "Provocative Diets in the Recognition of Food Allergy." Discussed by Drs. Hal McC. Davison, Atlanta, Ga.; Philip M. Gottlieb, Philadelphia, and Howard J. Lee, Milwaukee.

Dr. James R. Webster, Chicago, read a paper on "Dermatoses Which May Have an Allergic Etiology." Discussed by Drs. Nelson Paul Anderson, Los Angeles; Louis Tuft, Philadelphia; John Fromer, Boston, and James R. Webster, Chicago.

Dr. Walter L. Winkenwerder, Baltimore, read a paper on "The Clinical Indications and Limitations of the Antihistamine Drugs in Allergy." Discussed by Dr. Maurice S. Segal, Boston.

Dr. Charles H. Evermann, St. Louis, read the chairman's address, entitled "Clinical Experiences with the Diagnosis of Asthma."

# Hearings On Health Insurance

MAY 25, 1949

AFTERNOON SESSION—Continued

United States Senate, Subcommittee on Health of the Committee on Labor and Public Welfare

SENATOR JAMES E. MURRAY, presiding

Present: SENATORS MURRAY, TAFT and DONNELL

SENATOR PEPPER: I would like you to know, doctor, that I certainly recognize the right of every citizen to advocate any honorable course of action as the public policy of this country, and certainly no one has any right to condemn anybody who advocates what he honestly believes to be in the public interest if it meets reasonable standards of merit.

I subscribe to your hope that we may get away from the practice of name-calling. Would you go so far as to say that would prevent you folks who do not like our national health insurance program to quit calling us the advocates of socialized medicine?

DR. GOIN: Well, Senator, there we get into an exercise in semantics, just what socialized medicine is. It is a nice, convenient name, and people know what it means.

SENATOR PEPPER: The unfortunate connotation of it is that it suggests, and a lot of people charge, that anybody who advocates what they call socialized medicine is open to doubt as to whether they are good Americans or whether they are trying to import communism or something else into this country.

I think it would clarify the atmosphere a good deal if we could discuss this on the merits of it. As I said to a medical society in Jacksonville when I spoke to them, I will not accuse you of being selfish and acting out of pecuniary motives if you will not accuse me of being a socialist and acting out of sheer political merits.

Doctor, in your testimony, on the second page you referred there to the large "death rate from diphtheria per hundred thousand of population, in the last year for which comparative figures were available." It was "11.6 for Great Britain, 11.4 for Germany, but in the United States with a free enterprise system of medical care, it was less than 6.0. Why?" Now, what year did you have in mind there?

DR. GOIN: I believe the year 1939.

SENATOR PEPPER: Did they have compulsory health insurance which included the treatment for diphtheria in Germany for 1939?

DR. GOIN: They have had it since 1884.

SENATOR PEPPER: Did the health plan in effect in England in 1939 include treatment of diphtheria in children?

DR. GOIN: It included sicknesses of all insured persons.

SENATOR PEPPER: My advice is that it was only included in this system that went into effect last year in England. Now, 1946 is the year you used for comparison with respect to tuberculosis?

DR. GOIN: Not I; the Public Health Service.

SENATOR PEPPER: Well, "in the United States the rate was 47 per hundred thousand; in England and Wales it was 62; in France it was 137, and in Russia, 160." Of course, the year 1946, in respect to England, France and Russia, was pretty close after those countries had been through four years of war. Do you think that is a good year for comparison?

DR. GOIN: Perhaps not. It is the data I had available from Public Health Service.

SENATOR PEPPER: I do not think you would suggest that conditions were as severe in the United States as in those countries?

DR. GOIN: I would grant that.

SENATOR PEPPER: Now, you refer on page three to the death rate from communicable diseases. Would you say that the United States Public Health Service and the health services of the states and counties have had some influence in the reduction of that death rate?

DR. GOIN: I have no doubt about it.

SENATOR PEPPER: So all of that is not attributed to the private practice of medicine in the country?

DR. GOIN: No. The figure was quoted so triumphantly in Mr. Ewing's reports that I thought it might be well to debunk it slightly.

Senator Pepper: Under the voluntary plans, including the doctors' plans, can any patient get any service that he requests without having to have it approved by the doctor, if necessary?

Dr. Goin: No, I do not think any person could under any plan.

Senator Pepper: Well, somebody in respect to the Blue Cross and the other prepaid voluntary plans—does not somebody exercise some cautionary discretion?

Dr. Goin: I can only speak with authority for California Physicians' Service. No one can tell me not to have a roentgen study made if I am one of the subscribers.

Senator Pepper: Does every patient who wants a laboratory test and roentgen test, regardless of the doctor—

Dr. Goin: No, it is the doctor's opinion—but not some other doctor's.

Senator Pepper: Now, doctor, you said that medical care was only a small part of the medical problem, and you spoke about the value of good housing and school lunch programs and decent wages and adequate clothing. Because those do contribute to better health, has the American Medical Association made it a policy to support those measures when they have been before Congress?

Dr. Goin: I do not think it is a matter of concern with the American Medical Association. It is a matter of concern with every doctor as a citizen, but not a proper attitude for a medical association.

Senator Pepper: Although they would be in the interest of the better health of the people?

Dr. Goin: I think that is perhaps going a little too far. None of us have enough practical knowledge.

Senator Pepper: You were speaking awhile ago about the objective in the discussion of this matter, and I believe the first time you called the National Health Insurance Plan the national sickness plan in your statement. Are you now designating the National Health Insurance as the National Health-Sickness Plan?

Dr. Goin: Without the word health.

Senator Pepper: You do not mean we are trying to tax health?

Dr. Goin: I want to cease calling this health because I think it has little to do with health and nothing to do with insurance. It is certainly a tax provided for sickness, so I just like that name.

Senator Pepper: Well, have you any suggestion as to a name that we should apply and one that you should apply?

Dr. Goin: No, we have just one common name—sickness tax.

Senator Pepper: You would call it sickness tax? You think a bill that is designed to provide medical care for those who are sick should be called the sickness bill?

Dr. Goin: It seems to me like a good name.

Senator Pepper: And you do not think it is insurance?

Dr. Goin: Where you tax the people a part of their payroll or their income, no, I do not.

Senator Pepper: Doctor, you probably suggest that the treatment of disease and the care of patients who are ill is the prerogative of the skilled person; that is to say, the doctor, and that the layman should not interfere with the administration of medical care to the patient; that is correct, is it not?

Dr. Goin: I would believe that, yes.

Senator Pepper: Now, are doctors also specialists in economic matters? . . .

I was wondering whether or not the doctors were justified in going into the matter of how the people of the country could pay for the medical care they get; if the doctors were justified in denying the people the right to survey this field and to decide the best plan by which the people can pay the doctors for their services.

Dr. Goin: I do not believe they ever dreamed of denying that right. I think all that the doctors say is that they feel it is their duty to point out to the people and to those who make our laws that in our professional judgment this will not be a good way to serve the health of our people.

Senator Pepper: Now, doctor, as I understand, what we call the National Health Insurance Law is primarily a plan by which people are required to take out insurance; that is, to become members of the system by paying a part of their income periodically, and, as I understand, there is no compulsion on the patient with respect to the choice of doctor, or any compulsion on the doctor, either to come into the plan or with respect to the acceptance of the patient. It does contemplate, obviously, that there would probably be some agreement as to a scale of fees that the doctors might charge and that the hospitals might charge for medical services that might be rendered for the patients.

Dr. Goin: I understand that is proposed as one of the alternatives, but I do not think it will ever be done.

Senator Pepper: You mean that if the plan should be adopted there would be no agreement between the agency and the hospital—between the doctor and the hospital—as to what their charges would be?

Dr. Goin: No. On the contrary, the law provides that the board may make a price for hospital accommodations, and it does not say anything about the hospital agreeing to it. It just says that the board shall fix a price and that they will be based on the plan. What would happen to the majority of our private hospitals who do not have such accommodations?

Senator Pepper: It is probable that if the plan were adopted there would be some general agreement between the agency and doctors as to the fees they would render for covered patients.

Dr. Goin: That there will be a capitation fee set up. Every expert that you have had before this committee who is in favor of compulsory health insurance has testified that no manner but the capitation fee is practical administratively, and that a fee scale and a fee for service basis would wreck the whole plan. I do not think anything but a capitation plan would be adopted.

Senator Pepper: Does not the language of the law itself allow the county medical society—would you turn to the language of the law that pertains to the matter. It says there shall be a fee schedule.

Dr. Goin: But, as a matter of fact, that will not be practical and it will not be done.

Senator Pepper: What I am getting at is we have to concern ourselves with what the law says (page 118, Section 718):

> Agreements for the furnishing of medical or dental services (other than specialist services) as benefits under this title shall provide for payment—
> (1) on the basis of fees for services rendered as benefits, according to a fee schedule;
> (2) on a per capita basis, the amount being according to the number of individuals eligible for benefits who are on the practitioner's list;
> (3) on a salary basis, whole time or part time; or
> (4) on such combinations or modifications of these bases including separate provision for travel and related expenses, as may be approved by the State agency; according in each health-service area as the majority of the medical practitioners or of the dental practitioners, respectively, under agreement to furnish such services shall elect, et cetera.

Senator Taft, I am referring to page 118. The law gives the majority of the practitioners there the right to determine whether compensation shall be on a fee for service basis or one of these other methods.

Senator Pepper: What is the situation at the present time with respect to Blue Cross and the other prepayment plans? Is it some agreement as to a schedule of fees and hospital charges between the doctors and the hospitals and the authorities handling these plans?

Dr. Goin: There is an agreement between the hospitals and the Blue Cross. There is an agreement between the doctors and the Blue Shield, but they are agreements made between doctors—plans the doctors themselves have taken up.

Senator Pepper: The Blue Shield is simply a nonprofit organization; is it not?

Dr. Goin: Yes.

Senator Pepper: Is it operated by doctors or laymen?

Dr. Goin: I could not say. In our association of the voluntary medical care plan, it is operated by doctors. We have laymen on our board.

Senator Pepper: But is it your understanding that Blue Cross is operated by doctors or laymen?

Dr. Goin: Blue Cross is operated almost entirely by laymen.

Senator Pepper: Now, is there any agreement between Blue Cross representatives and hospitals as to what bills, what fees, the hospitals will charge covered patients for the services they render?

Dr. Goin: Surely.

Senator Pepper: That is an existing practice, is it?

Dr. Goin: Yes.

Senator Pepper: Currently carried on between the hospitals and the Blue Cross representatives, although Blue Cross representatives are generally laymen?

Dr. Goin: Yes.

Senator Pepper: Now, there is an agreed schedule of fees at present in practice in covered use between the doctors and Blue Shield, which is a voluntary association with respect to medical services, comparable to what Blue Cross is with the respective hospitals?

DR. GOIN: The Blue Shield is the name of an organization of medical care plans for the purpose of exchanging information and helping each other in general. The agreements are between the doctors and the various medical care plans and not really with Blue Shield.

SENATOR PEPPER: Yes, I know, but these Blue Shield—let us say that whatever the plans are at present, the voluntary plans under which you receive medical care on a prepayment basis, are these plans generally administered by laymen or doctors?

DR. GOIN: The executives are generally laymen.

SENATOR PEPPER: Now, these executives are the ones who enter into the agreement with respect to the schedule of fees by the doctors?

DR. GOIN: Not in our plan. California Physicians' Service, which is the second biggest plan. We set up the fee schedule.

SENATOR PEPPER: That is an association, however, set up by the doctors in California?

DR. GOIN: Yes.

SENATOR PEPPER: Not like these voluntary plans that are set up by laymen and not doctors?

DR. GOIN: Well, it is a voluntary plan. It just happens to be set up by doctors.

SENATOR PEPPER: What I am getting at is that a lot of doctors think it would be horrible to have any agreed scheduled fees between the agency, representing the National Health Insurance Program, and the doctors for the rendition of professional service. I was merely asking if that practice is not already prevalent in respect to the voluntary plans that are in existence.

Then I was next going to ask you, in the case of commercial insurance companies—doctors who practice, who render services to patients which are paid for by commercial companies—do they have any agreed schedule of fees for such companies?

DR. GOIN: I believe not. It is true in the voluntary plans in the Blue Shield organization, but I do not think it is with commercial carriers; nearly all of them indemnify. The doctor has no contractural relationship with them at all.

SENATOR PEPPER: They generally indemnify the patient that is covered. Is not that a principle that could be called a regulation here that might affect the doctor, simply to require him, if he comes into this system and renders medical care under the system, to agree with the agency with respect to schedule of fees generally, after the county medical society has determined what kind of payment shall be the custom?

DR. GOIN: I think that the doctor would feel better if it were indicated who would negotiate with him, and how. Primarily I do not think the doctor is concerned about his fee schedule and his fees; I think he is concerned about the federal degradation of the practice of medicine which he believes will follow the enactment of such law.

SENATOR PEPPER: Doctor, what is in this bill that suggests the degradation of the medical profession?

DR. GOIN: I do not think there is anything in the bill, but that is just the initial bill. There will be a series of directives and rules following this. Once you have committed yourself to it, you will not be able to back out.

SENATOR PEPPER: Do you not think Congress could reasonably be counted on to protect the medical profession from degradation, and to protect the people from that sort of distortion of the law?

DR. GOIN: So one might think the same thing of the House of Commons.

SENATOR PEPPER: It is difficult to make a comparison with another country. We get different advice as to how the system is working in England. I suppose you hear the doctors' side of it, and no doubt have the impression that it is not working out very well. Is that your impression?

DR. GOIN: It is indeed. My impression is that it gives extremely poor service. It is ruining doctors and discouraging their sons from becoming doctors.

SENATOR PEPPER: And that it is not in the public interest?

DR. GOIN: No.

SENATOR PEPPER: One other reference to England. I heard recently from a Labor member of the House of Commons and a Labor member of the House of Lords and from a Conservative of the House of Commons, who is not at all in sympathy with the Labor program—I heard all three of those men when they were visiting in Washington say, in effect, that the strongest appeal to the middle class, conservative, shopkeeping professional class of people was the existence of this health plan which the British Government now has in effect. . . . I do not know whether we would have similar experience if we had it in effect in this country; I would be willing to go to the people on the issue of whether or not it should be continued, if we could have an experiment with it.

DR. GOIN: Maybe we are confusing political value with medical value in this. I am not disputing political value.

SENATOR PEPPER: Doctor, you take the point of view that this legislation that some of us are sponsoring carries with it an implication that our medical care is not good and that our present system is bad in comparison with the systems of other countries. Of course, American medical care is the best in the world. But the question is: Is it as good as it could be in America?

DR. GOIN: I think not. . . . I will agree with you that we need to further our system of medical care. I do think we have a problem of medical care, but I do not think this is the way to solve it.

SENATOR DONNELL: Now, doctor, I want to ask you whether or not you believe this to be true: as you say in your statement here, "I oppose it as an American because I am persuaded that this type of legislation is one of the final steps on the road to state socialism." Is that your belief?

DR. GOIN: I do believe it.

SENATOR DONNELL: I have before me a copy of this 1679. On page 103, I call your attention to Title 7:

> The Congress hereby declares that it is the policy of the United States to take such steps and to utilize such of its resources as are necessary toward making adequate health services available to all our people regardless of residence, race, creed, color or economic status.

Do you agree with me that is a clear, definite statement of the fact that Congress declares that it is the policy of the United States to use the governmental resources in making available these health services?

DR. GOIN: It could not mean anything else.

SENATOR DONNELL: Is that one of the things that led you to think that this type of legislation is one of the final steps on the road to state socialism?

DR. GOIN: Yes, it is.

SENATOR DONNELL: Here is what occurs thereafter. On page 104 it starts out: "The personal health services to be made available as benefits to eligible individuals as provided in this part are medical services, dental services" under the terms of this bill, a government bill. Then I pass on to lines ten and eleven in reference to the persons who shall provide each respective class of service who are noted as: "who are qualified under part C of this title, to do so."

That indicates, does it not, that a law is entering into this in determining who shall be qualified to provide these services which are determined and defined to be benefits under this law of the United States?

DR. GOIN: True.

SENATOR DONNELL: Is not that a further indication as to whether or not this is on the road to state socialism?

DR. GOIN: I have no doubt of it.

SENATOR DONNELL: Now, doctor, look on the next page, if you will, on lines 13 and 14, the subject there under discussion is hospital services.

> Hospital services consist of hospitalization, including necessary nursing services, and such physician, laboratory, ambulance, and other services in connection with hospitalization as the National Health Insurance Board, after consultation with the National Advisory Medical Policy Council, by regulation designates as essential to good hospital care.

—those are two governmental boards; a board and a council created by this bill; are they not?

DR. GOIN: That is a point I tried to make. The language of the law is fairly gentle, but it is possible for the board to make any or almost any additional law that it so wishes.

SENATOR DONNELL: I just want to point out a few indications as to whether or not this is a governmental division, that it is something to be administered by the government, to be paid for by taxes secured by the government and under regulations under governmental boards.

This board and council to which reference is made on page 105 is a board and council, respectively, created by this bill, are they not?

DR. GOIN: Certainly.

SENATOR DONNELL: And the regulation referred to on page 103 and 104 is a governmental regulation, is it not?

Dr. Goin: Regulation of the board.

Senator Donnell: And it is a governmental board—the National Health Insurance Board?

Dr. Goin: Yes.

Senator Donnell: Now turn to page 136 of this bill and make a little inspection of what this National Health Insurance Board is.

In the first place, down at the bottom of the page 136, does it not read: "There is hereby established in the Federal Security Agency a National Health Insurance Board?"

Dr. Goin: Yes.

Senator Donnell: Mr. Oscar Ewing is to be the head?

Dr. Goin: Yes.

Senator Donnell: As the governmental security administrator? Now, this board is to be composed of five members, three of whom are to be appointed by the President and the other two of whom shall be the Surgeon General of the Public Health Service and the Commissioner for Social Security.

Dr. Goin: That would be the other two appointed by the President already.

Senator Donnell: The Surgeon General and the Commissioner for Social Security, of course. Then there are five appointees by the President. I would assume the Surgeon General and the Commissioner of Social Security are appointed by him; I have never heard anything to the contrary.

In the middle of the page, you will notice in lines eleven and twelve that "each appointed member shall receive a salary at the rate of $12,000 a year" with certain exceptions, for a term of six years. They are also forbidden to do anything else, so that board that is going to issue this regulation is to be a functioning governmental board, is it not?

Dr. Goin: Surely, full time.

Senator Donnell: Am I correct in assuming that to be one element which enters into whether or not this type of legislation is a step toward state socialism?

Dr. Goin: It seems so to me.

Senator Donnell: Now, if you will drop down to the bottom of page 137, I want to call your attention to this. Here we have a board, with power to make regulations, as specified on page 105, each member of which is to get $12,000 a year, and let us see what power that board has. On page 137, if you will be kind enough to refer to that: "all functions of the Board shall be administered by the Board," and what are the next words? "Under the direction and supervision of the Federal Security Administrator."

Dr. Goin: That is correct.

Senator Donnell: So we have a board here, a governmental board, paid good-sized salaries. All of these functions, which we read 32 pages ahead, are administered under the direction and supervision of the director.

Dr. Goin: When I read it it seemed to me that the functions remaining with the board were to do what the Administrator of the Federal Security Agency told them to do.

Senator Donnell: I do not think your conclusion is at all strange. At any rate, the language is as I read it, that all functions of the board shall be administered by the board under the direction and supervision of the Federal Security Administrator. It performs such "functions as it finds necessary to carry out the provisions of this title, and shall make all regulations and standards specifically authorized to be made in this title." You recognize those words: regulations and standards? It is going to have to make standards and regulations and such other regulations not inconsistent with this title as may be necessary. And then we read a little further on page 138:

> The Board may delegate to any of its members, officers or employees, or with the approval of the administrator to any other officer or employee of the Federal Security Agency, such of its powers or duties, except that of making regulations, as it may consider necessary and proper to carry out the provisions of this title.

Am I not correct in this analysis that back on page 105 is the power of making regulations, vested in this board, after consultation with the Advisory Council—all simmers down to the fact that all that making of regulations in the first place is to be done by a governmental organization, but is to be done under the direction and supervision of one individual, the Federal Security Administrator? And not only that regulation but all these regulations that are specified on page 138; namely, all regulations and standards specifically authorized to be made in this title, and such other regulations not inconsistent with this title as may be necessary; so I take it, doctor, that the power of regulations there is twofold: one, to make those it says you will and the others that he is told you cannot make; is that it? And that his whole power is subordinated to the one United States governmental official, namely, the Federal Security Administrator; is that correct?

Dr. Goin: That is correct.

Senator Donnell: Do you know if the Administrator shall ever have had any experience with the practice of medicine or health matters?

Dr. Goin: Nothing in here says so.

Senator Donnell: He is not a doctor, is he?

Dr. Goin: He is a lawyer.

Senator Donnell: Mr. Ewing came from New York City and is a lawyer.

Dr. Goin: That is my understanding.

Senator Donnell: If you just turn now to page 107, line 13, we will read a little more about what this board does:

> The Board shall have the duty of studying and making recommendations as to needed services and facilities for the care of the chronic sick afflicted with physical ailments, and for the care of individuals afflicted with mental or nervous diseases, and as to needed provisions for the prevention of chronic physical diseases and of mental or nervous diseases; and of making reports from time to time, with recommendations as to legislation, but the first such report shall be made not later than two years after benefits under this title first become available.

Doctor, would you not consider that a board that has the power of making recommendations as to the services for the care of the chronic sick and of the provisions for the prevention of chronic sickness, all this under the supervision and direction of the Federal Security Administrator, would you not consider that under those circumstances there is ample reason to say that this is a strong, a long step in the direction of state socialism?

Dr. Goin: I think it is, and I think it makes the Federal Security Administrator the director of medical care in America.

Senator Donnell: Now, Doctor, let us just turn to page 112. You will note at the bottom of the page, lines 22 and following:

> The Board,

—that is that same creature, the Board which is under the direction of the Federal Security Administrator—

> after consultation with the Advisory Council, shall establish standards as to the special skills and experience required to qualify an individual to render each such class of specialist services as benefits under this title, and to receive compensation for such specialist services. In establishing such standards and in determining whether individuals qualify thereunder, standards and certifications developed by professional agencies shall be utilized as far as is consistent with the purposes of this title, and regard shall be had for the varying needs and the available resources in professional personnel of the States and of local health-service areas.

That is a very important provision, is it not, Doctor, that the board, acting under the direction and supervision of the Federal Security Administrator, who is not a doctor and does not have to be a doctor, shall establish standards as to the special skills and experience required "to qualify an individual to render such class of specialist services as benefits under this title." That is an important, all-embracing power.

Dr. Goin: It frightened me when I read it because I have gone to the trouble of getting myself certificated by a professional examining board, and now Mr. Ewing, who does not, I imagine, take a very favorable view of me anyway, could easily uncertificate me.

Senator Donnell: It is rather curious that not only is this a governmental scheme worked out, to be administered by governmental officials, but a man who does not have to have studied medicine five minutes in his life has the power to direct a board as to the standards with respect to which the board fixes as to special skills and experience required to qualify a person to render specialist services. That is a pretty comprehensive power, to say the least.

Now would you turn to page 116, line 16, where it says: "Each agreement made under this part"—now, that part is Part C, which is "*Participation of Physicians, Dentists, Nurses, Hospitals, and Others.*" I call attention to the fact that among the agreements that are to be made under this part are the agreements set forth on page 118. Those are agreements for the furnishing of medical or dental services, other than specialist services, as benefits under this title, shall provide for payment—and then it tells the methods of payment. Here is an agreement for the furnishing of specialist services, and the agreements for the furnishing of hospital services, and so forth and so on, and with a provision down here on the agreement of furnishing hospital services that the board—the same board that is under the direction of the Administrator, after consultation with the Advisory Council and "with representatives of interested hospital organizations, may by regulation prescribe maximum rates for hospitalization furnished as benefits under this title."

Dr. Goin: If I were interested in setting up a truly socialistic system, that I could control, and if I were a social security administrator, I would fix the rates so low that the hospitals could not operate, and common sense and humanity would say that I would have to operate them.

Senator Donnell: There is no insurance against such a plan's being worked out under this bill, is there?

Dr. Goin: There is not.

Senator Donnell: There is an agreement on page 120, agreements for furnishing of home-nursing services or auxiliary services; there is a provision about the amount of payments for services—that is on page 120 and 121; all sorts of things are in here about the rates, and amounts of payments, and the assurance of "reasonable equivalent awards for practitioners selecting different methods of payment, in consideration of the value of the services they render."

There is a provision with respect to the maximum limits on the number of eligible persons with respect to whom any person may undertake to render services—all of these things on page 116.

Now, Doctor, do you agree that that says in effect that anybody who makes any of these agreements, that everybody who makes one of those contracts for any of these things agrees to comply with the regulations prescribed under this title?

Dr. Goin: You just have to sign a blank check.

Senator Donnell: You sign up to comply with [the regulations made by] this board that acts under the direction of the Federal Security Administrator and what he shall prescribe.

Now, let us take a glance at one or two other things. At the bottom of page 121 it says:

> Maximum limits upon the number of eligible individuals with respect to whom any person may undertake to render services in any local health service area may be fixed by the local administrative committee or local administrative officer of that health-service area only on the basis of a recommendation of the professional committee in that area that such limitation is necessary to maintain high standards in the quality of medical, dental, or other services furnished as benefits. Any such limits shall take account of professional needs and practices and shall provide suitable exceptions for emergency and temporary situations.

There it talks about local administrative committees.

This prescribes, does it not, quoting from the bottom of page 121, "Maximum limits upon the number of eligible individuals" may be prescribed, so that a doctor cannot take more than a certain number of persons, the maximum number of whom shall have been prescribed by this local administrative committee or local administrative officer.

Dr. Goin: Yes, that is one indication that the real intention is to function on a capitation basis. If you must have a maximum, you must have a capitation basis and a capitation panel.

Senator Donnell: Suppose you lived in Springfield, Ill., and Dr. Smith was the most popular doctor in Springfield, and they decide to follow this capitation plan, and Dr. Smith is allowed 1,000 patients. There is a great rush down to the post office on the day that the selection is to be made; everybody wants to take Dr. Smith and they can pick him and a thousand people take him right quickly. Then, Mr. Lawrence, over there, has been out of town for a few days. He has been living there in that town, and he wanted Dr. Smith, too. He is too late, and he has to take somebody else, unless there is some special provision made in this bill for Dr. Smith to have some elasticity in this list.

That makes it impossible for Dr. Smith to take on a dozen of us who happen to be out of town that day and cannot get in to make our selections. . . . Now, suppose I have selected Dr. Smith—I thought he was the very man, but suppose I am stricken with heart disease one year after that, and I think that Dr. Jones ought to have been the man whom I selected, but Dr. Jones' panel is full. Is there any hardship there that you see which is going to be inflicted on me?

Dr. Goin: I should think it is a very great one. You do not have a free choice of physicians at all, and furthermore if Dr. Jones' panel was not fully filled, you might find difficulty in transferring yourself from one panel to another.

Senator Donnell: In other words, you have to go through the forms and regulations, and whatever is prescribed here in order to get it done.

Dr. Goin: Yes, certainly.

Senator Donnell: Doctor, if you will now turn to—well, let us try page 143. It says:

> The Federal Security Administrator, through such units of the Federal Security Agency as he may determine, shall upon his own initiative or upon application of any individual make determinations as to the eligibility of individuals for benefits under this title.

Am I correct in my understanding, that that gives the Federal Security Administration the right to make a decision as to whether I am eligible for benefits under the title?

Dr. Goin: That is what it means.

Senator Donnell: There is some provision here about appeal. At any rate, in order to upset a decision made by the Federal Security Administrator in Washington, and acting through such unit of the Federal Security Agency as he may determine, you have to comply with whatever regulations have been prescribed by this board which the Federal Security Administrator himself directs.

Now, would you turn to page 134. Beginning with line 13 is a provision which is as follows:

> If a State has not prior to July 1, 1950, submitted and had approved a plan of operations, the Board shall notify the Governor of the State that the Board will be required to administer this title in the State, commencing July 1, 1951.

That is the federal board.

Dr. Goin: The state seems to have no choice at all.

Senator Donnell: In other words, the state has to submit a plan of operations. Now, if it has not done it by July 1, 1950, then the board, this federal board which is under the direction of Mr. Ewing, notifies the governor that the board will be required to administer the title in the state, commencing July 1, 1951.

Dr. Goin: The state has not only to submit the plan, but to have had it approved by the board. In other words, if the board does not like the plan the board can then go in and operate its own plan.

Senator Donnell: I am glad you called attention to it. Unless the board has decided in its wisdom, has put into its head, perhaps, by the Federal Security Administrator, who has this power of direction, if it has not approved the plan of operations by July 1, 1950, then the board can take charge and go ahead in the state.

Now, would you turn to the bottom of page 145. I was talking about these appeals of one kind or another. It tells all about what anybody can do if he is aggrieved. He may make a complaint to the local administrative officer or the local executive officer, that is, the person who is required to follow both the rules prescribed by the state and the rules prescribed by the board which, in turn, are subject to the administration of the Federal Security Administrator.

Here you are on your back with typhoid, and you do not like that; you have the privilege of making this complaint to this official.

If that officer to whom you have made that complaint finds, after investigation—he has the right to investigate; there is nothing prescribed there as to how long that investigation is required to be or how short it must be, is there?

Dr. Goin: He does not have to give him a complaint at all if he does not think it is well founded.

Senator Donnell: If the officer to whom such complaint is made finds, after investigation, that the complaint is well founded, he shall promptly take such steps as may be appropriate to correct the action or inaction complained of, and he shall notify the individual or other person making the complaint of his disposition thereof.

Now, suppose you are lying there sick, and he decides against you, and you think something ought to be done that is not done, and he investigates it, and you are getting sicker all the time, and he decides against you, but you have your rights all right. They are protected here in the next line.

Here you are now, suffering, and this says:

"Any such individual or other person dissatisfied"—you may not be conscious enough to know whether you were dissatisfied, but supposing you were. What do you do? You have got to do it in writing; I suppose typewriting would be sufficient, but it must be in writing, "request a hearing thereon and shall be afforded opportunity for the same pursuant to subsection (b), which says:

> *Provision* shall be made for the establishment of necessary and sufficient impartial tribunals to afford hearings to individuals and other persons entitled thereto under subsection (a) of this section, or section 717(d) of this title.

Well, let us turn back to 717(d)—that is where the state agency finds "that an individual or other person under agreement to furnish or provide personal health services as benefits is no longer qualified to furnish or provide such services, or has committed a substantial breach of the agreement," and so forth. Now, these tribunals are to be established to afford hearings under subsection (a) of this section, or back in section 717(d) of this title, and for further review of the findings, conclusions, and recommendations "of such tribunals, in accordance with regulations made by the Board, after consultation with the Advisory Council."

Of course, all the time the Federal Security Administrator is on top of the whole thing with his power of direction. It goes ahead here with further protective measures for you, who are lying there sick all the time. It says:

> With respect to any complaint involving matters or questions of professional practice or conduct

—you may have complained about the way the doctor acted toward you, his treatment—

> With respect to any complaint involving matters or questions of professional practice or conduct, the hearing body shall contain competent and disinterested professional representation; and with respect to any complaint *involving only matters or questions of professional practice or* conduct, the hearing body shall consist exclusively of such professional persons.

Now, Doctor, does that mean that you are going to have a jury of doctors which is going to pass on this thing? They have to be brought in to decide on that on appeal from the action of the local official; is that right?

Dr. Goin: I am sure that is the case.

Senator Donnell: Let us go on a little further. How are we going to pay for all this? You will notice on page 147 that there is created on the books of the Treasury a separate account to be known as the "Personal Health Services Account." Funds are to be invested by the Secretary of the Treasury. They are to be available for all expenditures, and there is going to be appropriated, first, "sums equal to 3 per centum of all wages estimated to be received during such fiscal year."

By the way, this does not provide anything for the fellow not getting wages. The indigent is not covered, is he?

Dr. Goin: Neither the indigent nor the person who has become too old to work.

Senator Donnell: Just the fellow who is fortunate enough to have a job is covered by S. 1679.

Dr. Goin: He has to have a job and a pay check.

Senator Donnell: Bearing all these things in mind, all this creation of boards and officials and rules and regulations and the Federal Security Administrator in Washington, D. C., sitting at the top of the heap, with the power of direction over the board that administers the whole thing, is there any doubt in your mind that that is a step on the road toward state socialism?

Dr. Goin: It is one of the last steps. I think we are almost there, if we do it.

Senator Donnell: Now, Doctor, I suppose that if there was a statute passed whereby everybody was to get $5 on every Monday morning, there would be many people to vote for persons who wanted to run for Congress on that plank, would you not think so?

Dr. Goin: I am sure that would be so.

Senator Donnell: If they actually got it started, a good many Congressmen would be afraid to change around after it once started.

Were you over in Germany?

Dr. Goin: I spent nine months doing graduate work at the University of Frankfurt, and observing this *Krankenkasse.*

Senator Donnell: Doctor, would you tell us what you would say with reference to the operation of the system they had in effect with respect to medical matters?

Dr. Goin: All of the German doctors I knew had from forty to sixty house calls to make every day. They had to travel all over the city, and in addition to that they had to see 25 to 40 persons in their office hours.

People came to the doctor, so they told me, for the most trivial things, largely to get certificates that exempted them from going to work, so that they could get their disability pay; and, of course, if a man was only working half-time anyway, and the weather was bad, and he could get just about as much in staying home as going to the factory, he would obviously stay home. That took up much of their time, and they did not have time to see people who were really sick.

Senator Donnell: Doctor, do you have any illustration in mind as to the degradation of physicians that has occurred in other countries, or the decrease in their professional attainments or competitive desire or skill?

Dr. Goin: Not so long ago every young man who finished medicine in America and was reasonably ambitious tried his best to go to Germany and Austria for study. Now, everybody would give his right arm to come here. That is what has happened to their medical system. It is not as the direct result of this sort of thing, but it is coincidental.

The British doctors, I am told by British physicians, are almost reduced to a lower grade civil servant. The doctor does not have much freedom about what he does; his time is largely taken up with writing out statistical reports and certificates to purchase corsets and false teeth, and eye glasses and wigs, and that sort of thing, and the ones that I talked to were thoroughly disheartened.

Senator Donnell: You predict here in your statement that the enactment of this legislation will decrease the number of physicians produced annually, and that it will lower the quality of the young men who enter medicine. Do you want to amplify that point?

Dr. Goin: Of course, all we can do is to observe what has happened elsewhere. It is reasonable to assume that something like that will have to happen if you enact a law something like this. The average doctor in Great Britain now has an annual income of about $5,000. Out of that he has to maintain his office and pay assistants, and if he is fortunate enough to have an automobile he has to maintain that.

I do not see why a young man would subject himself to the severe discipline of at least two years in college, at least four years in medical school, at least one year in hospital training, for the purpose of earning the amount of money that he could have earned the first six months after he had started his college course.

Senator Donnell: Have you ever seen the book or books of regulations and laws under the British law?

Dr. Goin: Yes.

Senator Donnell: Tell us about how large these books are.

Dr. Goin: Well, the official book of regulations contains 1310 pages. Then they had a second book which was known familiarly as the doctor's Bible, and that was a digest of these regulations and between 500 and 600 pages. This book the doctor had to refer to constantly to see what he might or might not do.

Senator Donnell: Have you studied anything about New Zealand, with this type of thing?

Dr. Goin: I am moderately familiar with it.

Senator Donnell: Would you characterize your understanding of their experience?

Dr. Goin: I understand it has been a great failure, and it is a great national scandal. I know it has taken a great deal more money than they have ever been able to collect from it. It seems to me that 7 per cent of the national income has been taken to run that plan.

Senator Donnell: I intended to ask whether you had studied S. 1581, the Taft bill, and what your impression was about the bill.

Dr. Goin: With some small amendments, I would be prepared to support it. I have not studied it carefully but my general impression is favorable.

Senator Pepper: Do you know of any country which has adopted what we call national health insurance, compulsory prepayment for health care, which, once having established it, has repealed it?

Dr. Goin: I do not. I do not think that the people always know what they should have. I think they frequently have to be guided by people with more expert knowledge. What the people want I think they should and do get. That is the kind of country we have.

Senator Pepper: You would want to preserve the right of the patient who might have been abused and neglected to complain to somebody, would you not?

Dr. Goin: Of course.

Senator Pepper: Let us take the voluntary insurance plans that are now in effect. Let us take yours, the one initiated and operated by the physicians in California. How long does a member pay for whenever he joins up, for a day or a month or a year or what?

Dr. Goin: Well, a member who has a payroll deduction pays for the period of his pay check.

Senator Pepper: You use the payroll deduction method also? How long does a person pay for when he joins up?

Dr. Goin: When he joins an employed group he just joins for the period that his pay check covers. Usually it is two weeks or a month.

Senator Pepper: Supposing this individual feels that he wants to go around to see his doctor, and he is not there. He calls for the doctor, and the doctor does not come or he thinks that the doctor did not give him the care that he should have had. What does he do?

Dr. Goin: Just calls another doctor.

Senator Pepper: You mean that he calls another doctor who is part of the same program.

Dr. Goin: Everybody is part of it.

Senator Pepper: Every doctor in California is a member?

Dr. Goin: For practical purposes. We have 9,788, and I suppose there are 10,500 doctors practicing.

Senator Pepper: Suppose he complains; that he goes to the second doctor, and this doctor treats him and he does not give him the right kind of treatment. Then what does he do?

Dr. Goin: Go to a third doctor.

# Washington Letter

*(From a Special Correspondent)*

July 5, 1949.

### List of Final Witnesses Heard by Murray Subcommittee

Among those who were heard in the closing week of the Senate health subcommittee's hearings were: Dr. Joseph S. Wall, American Academy of Pediatrics, who registered objection to compulsory health insurance; R. D. Murphy and Edward H. O'Connor, representing insurance interests, who likewise expressed opposition to the Thomas-Murray-Dingell bill, the latter also criticizing the Hill and Taft bills because they would exclude commercial medical and hospital care plans from participation in benefits, being limited to nonprofit programs; Dr. William J. Stickel and Dr. Albert Bailey, recommending, respectively, that chiropodists and osteopaths be included among the health service practitioners eligible to participate in the various types of programs under consideration; Dr. Leona Baumgartner, associate chief, and Katherine Lenroot, chief, the U. S. Children's Bureau, who endorsed expansion of federal efforts in the maternal and child health field, and Robert A. Hornby, San Francisco businessman and representative of the U. S. Chamber of Commerce, who detailed the reasons for the chamber's opposition to compulsory health insurance. Arguments to the contrary were presented by Mrs. Lula Evanson and Angus McDonald, in behalf of the National Farmers Union. Lloyd C. Halvorson, economist for the National Grange, said that his organization is dubious of compulsion and emphasized the need of making progress in such noncontroversial fields as aid to local public health agencies and expansion of medical research.

Co-sponsors of the so-called Flanders-Herter bill who urged its adoption in testimony before the Murray subcommittee were senators Flanders and Ives and representatives Javits, Case and Herter. This plan, they said, would obviate compulsory health insurance and make adequate medical and hospital coverage available—at moderate cost—to the lowest-salaried workers on a voluntary basis.

### Hospital Expansion Favored Before House Group

On June 29 and 30, numerous members of the House and spokesmen for hospital and farm groups appeared before or filed statements with the Priest subcommittee for the purpose of endorsing proposed liberalization of the Hill-Burton Act to accelerate construction of hospitals throughout the country. Witnesses included George Bugbee, executive director of American Hospital Association, who urged that the federal contribution (now 33⅓ per cent) be made no higher than 40 per cent; Rev. Dr. John G. Martin, of American Protestant Hospital Association, who stressed the progress being made by Blue Cross plans; Hugh H. Murray Jr., of Raleigh, N. C., representing the National Association of Mutual Insurance Agents, who asked that controversial subjects such as health insurance be laid aside while action is being taken to increase medical manpower, and House members from nearly one third of the states.

When the House health subcommittee resumes its hearings, on July 6, it will be to take up pending proposals for increased federal funds for local public health units and for research in child health.

### Dr. Hugh G. Grady Heads American Registry of Pathology

Appointment of Dr. Hugh G. Grady as scientific director of the American Registry of Pathology has been announced by Brig. Gen. Raymond O. Dart, director of the Army Institute of Pathology. Approved by Surgeon General Raymond W. Bliss, the appointment was recommended by the Committee on Pathology, National Research Council. Dr. Grady succeeds Col. James E. Ash, U. S. Army Medical Corps (Ret.), who is retiring from active participation in registries. A native Philadelphian, Dr. Grady received his M.D. from Jefferson Medical College in 1934 and during the late war served as pathologist and executive officer of the Army Institute of Pathology.

# Medical Legislation

## STATE LEGISLATION

### Illinois

**Bill Introduced.**—S. 636 proposes to direct the board of trustees of the University of Illinois to prescribe minimum qualifications for **admission to the College of Medicine** of the University. The proposal would also require that each class of first year students admitted to the College of Medicine shall include at least three residents of each senatorial district in the state, provided that there are three or more applicants from such district who possess the minimum qualifications.

### Michigan

**Bills Enacted.**—H. 446 has become Public Act No. 226 of the Acts of 1949. It provides that any program of **instruction in sex hygiene** in the public schools shall be supervised by a registered physician, a registered nurse or a person holding a teacher's certificate, qualifying such person as supervisor in this field. No instruction in birth control shall be included in such courses. S. 91 has become Public Act No. 164 of the Acts of 1949. It provides that, in order to afford adequate protection to all children of the state against certain dangerous diseases, every physician engaged in general practice and every county, district, city, village and township health department employing a full time health officer shall **offer immunization treatments** for protection against diphtheria, whooping cough, tetanus and smallpox to all children over 6 months of age at their first visit to the doctor's office or health department except when it is contraindicated; provided that in no instance shall a health officer or any member of his staff give such immunization treatments to any child without the written consent of one of the parents or the guardian or to any child whose parents or guardian have religious objections to such treatments. The law also requires health departments to offer free immunization treatments to the public at large for protection against smallpox and typhoid in the event of an epidemic or threatened epidemic of such diseases. S. 121 has become Public Act No. 278 of the Acts of 1949. It requires the state health commissioner within the limits of financial ability to establish and administer a program or service of assisting local health departments, schools or other community groups in developing and maintaining **periodic hearing screening tests** among children for the purpose of seeking out children who may have hearing impairment so they may secure proper and necessary care and attention.

### Missouri

**Bills Introduced.**—H. 164 proposes to make it unlawful for any employer to require any employee or applicant to pay the **cost of a medical examination** or the cost of furnishing any medical records required as a condition of employment. H. 264 proposes the enactment of a new law regulating the licensing of **registered nurses**, licensed practical nurses and registered obstetrical nurses. H. 2073 proposes the creation of a state **board of medical examiners** to take over the duty of licensing and regulating practitioners of medicine, surgery and midwifery now regulated by the state board of health. S. 237 proposes to authorize all counties of the first class to appoint a **pathologist** to have all of the rights and duties and powers of a deputy coroner.

### New Hampshire

**Bills Enacted.**—H. Con. Res. 13 was approved May 26, 1949. It memorializes the Congress of the United States to enact S. 102, entitled an act to amend the Public Health Service Act to provide for research and investigation with respect to the cause, prevention and treatment of **multiple sclerosis and related neurologic diseases.** H. 245 has become chapter 241 of the Laws of 1949. It requires any physician or hospital superintendent to immediately report to the local board of health any person under his care or observation who is affected with a **communicable disease** or any other condition requiring reporting by the physician.

### South Carolina

**Bills Enacted.**—H. 1387 has become Governor's Act No. 610 of the Acts of 1949. It amends the act relating to the **practice of naturopathy** by setting forth grounds for the revocation of a license, by requiring a two year premedical course, rather than one, and by making licensure discretionary, rather than mandatory, on the part of the board. H. 1568 has become Governor's Act No. 580 of the Acts of 1949. It provides that a representative of the State Nurses Association, the State Dental Association and the State Pharmaceutical Association shall be appointed to membership of the Executive Committee of the **State Board of Health.**

# Coming Medical Meetings

International Congress of Biochemistry, Cambridge, England, Aug. 19-25. Lt. Col. Francis J. Griffin, 56 Victoria St., London, W.C.1, Organizer.

Montana State Medical Association, Butte, Aug. 1-4. Dr. Herbert T. Caraway, 115 N. 28th St., Billings, Secretary.

West Virginia State Medical Association, White Sulphur Springs, The Greenbrier, Aug. 4-6. Mr. Charles Lively, 1031 Quarrier St., Charleston. Executive Secretary.

# GOVERNMENT SERVICES

## ARMY

### MEDICAL SUMMER CAMPS

The first contingent of college students who will attend R.O.T.C. summer encampments at Brooke Army Medical Center, Fort Sam Houston, Texas, is under way for six weeks of training. The students have been divided into two groups. Training for the basic group, those men with no previous military experience, who have completed only their freshman year in medical school, or those who prefer field training, is conducted by the *Medical Field Service School at the Medical Center.* For medical students who previously served with the armed forces, a hospital camp has been set up and, under the direction of Brooke General Hospital, offers a clinical clerkship course. In addition to military studies, the students attend regular hospital and staff conferences and observe diagnostic and treatment procedures throughout Brooke General Hospital.

Of the students now attending the Brooke General Hospital Camp, 80 have finished their second year of medical study and 43 have completed the third year. A large number of them hold reserve commissions as line officers, but have preferred through the R.O.T.C. method to obtain reserve commissions in the Medical Corps. Available clerkships for the summer encampment are 40 in general medicine; 15 in general surgery; 8 in orthopedics; 15 in laboratory sciences; 8 in diseases of eye, ear, nose and throat; 6 in obstetrics and gynecology; 6 in urology; 6 in anesthesiology; 30 in neuropsychiatry, and 1 in radiology. Men who have completed only the first two years of medical school are invited to clerkships in general medicine, general surgery, neuropsychiatry and laboratory sciences. Every effort is made to assign the students to the specialty of their preference, and, once they are assigned, there is no rotation of services during the six week training period.

Because of the large membership in medical R.O.T.C. units, the same six week course for both basic and advanced students will be presented to a second group in August.

### ACCEPTED FOR ADVANCED TRAINING

The following medical officers have been accepted for advanced training in the civilian institutions indicated:

Lt. Colonel David H. Naimark, University of Buffalo, Buffalo, Internal Medicine.

Lt. Colonel Larry A. Smith, Jefferson Medical College of Philadelphia, Philadelphia, Internal Medicine.

Lt. Colonel John S. Oartel, University of Pennsylvania, Philadelphia, Oral Medicine.

Major Richard J. Brightwell, University of Colorado, Denver, Internal Medicine.

Captain John M. Geary, University of North Carolina, Raleigh, N. C., Entomology.

Captain Warren H. Kimsey, Neurological Institute, New York, Neurological Surgery.

First Lt. John H. Angell, Johns Hopkins Hospital, Baltimore, Gynecology.

First Lt. George H. Flessas, St. Mary's Hospital, Madison, Wis., Intern Training.

First Lt. Rudolph M. Jarvi, Harper Hospital and Children's Hospital, Detroit, Pediatrics.

First Lt. William F. Hughes Jr., Saint Luke's Hospital, Cleveland, Medicine.

*First Lt. Arthur W. Adams, Ellis Hospital, Schenectady, N. Y.,* Surgery.

First Lt. Robert F. Hufner, University of Colorado Medical Center, Denver, Pathology.

First Lt. Arnold J. Capute, Flower and Fifth Avenue Hospitals, New York, Pediatrics.

First Lt. Robert H. Wildhack, Millard Fillmore Hospital, Buffalo, Obstetrics & Gynecology.

First Lt. Gilbert A. Varnell, Bridgeport Hospital, Bridgeport, Conn., Obstetrics.

### SURGEON GENERAL PLACED DIRECTLY UNDER CHIEF OF STAFF

The Department of the Army has announced that the Surgeon General will be placed directly under the Chief of Staff to facilitate his direct access to the Secretary of the Army and to the Chief of Staff. General Omar N. Bradley, Chief of Staff, said that this same organizational pattern is being implemented throughout the Army so that all medical officers will have direct access to their respective commanders.

## PUBLIC HEALTH SERVICE

### LOWEST DIPHTHERIA INCIDENCE ON RECORD

The National Office of Vital Statistics' report on communicable diseases for the first sixteen weeks of 1949 indicates that the incidence of diphtheria is probably lower for the country as a whole than for any corresponding period on record. Typhoid and meningococcic meningitis also had lower morbidity levels. The report was based on weekly telegraphic reports sent the National Office of Vital Statistics by state health departments.

### 259 INTERNSHIPS

Beginning July 1, 1950, the Veterans Administration will offer 259 internships to qualified graduates of recognized medical schools in thirteen of its hospitals. The intern program will be conducted under the direction of the Deans' Committees in cooperation with certain medical schools close to the hospital. This program follows by four years VA's establishment of residencies for teaching purposes and is the next step in expanding the teaching facilities in hospitals in line with policy originally set up with the establishment of the Deans' Committee. There will be three types of internships—straight internal medicine, straight general surgery and rotating. Internships will be set up in the following VA Hospitals: Los Angeles; Van Nuys, Calif.; Newington, Conn.; Chamblee, Ga.; Dearborn, Mich.; Oklahoma City, Okla.; Memphis, Tenn. (Kennedy); Nashville, Tenn.; Dallas, Texas; Houston, Texas; McKinney, Texas; Salt Lake City, and Richmond, Va. (McGuire). Application blanks may be secured after August 1 by writing to the representative of the local Deans Committee for each hospital.

### WORLD HEALTH ORGANIZATION FELLOWSHIPS

Two specialists in tropical diseases from India and two from China, carrying on advanced studies on fellowships granted by the World Health Organization, are now guest researchers at the National Institutes of Health, research branch of the Public Health Service. Dr. Amar Ray and Dr. Simili Ramakrishnan are assistant directors of the Malaria Institute of India, and both served as lieutenant colonels in the Indian Army during the war, organizing and directing malaria research and control activities. Dr. Ray will concentrate on malaria chemotherapy and chemoprophylaxis, while Dr. Ramakrishnan will investigate the host-parasite relationship in man and birds.

Dr. Tzu-Ta Chen and Dr. Pei Kai Kuo of China will spend a few weeks in the Laboratory of Tropical Diseases, observing research methods in parasitology. Dr. Chen is on leave of absence from the Nanking Central Hospital, and Dr. Kuo was most recently connected with the National Defense College at Shanghai.

### CLINICS ON CAUDAL ANALGESIA IN CHILDBIRTH

The Surgeon General announces that a series of clinics at leading European universities will be initiated by Dr. Robert A. Hingson on the technic for continuous caudal analgesia for the control of childbirth. The clinics are scheduled at Oxford, Cambridge, Leeds, Newcastle, Edinburgh, Geneva, Paris and Stockholm. Dr. Hingson, who with Dr. Waldo B. Edwards, another Public Health Service officer, developed this technic in the Staten Island Marine Hospital, also lectured on this subject before the British Medical Association at its annual meeting in Harrogate late in June. Physicians from 32 foreign countries already have come to the United States to study this subject. Dr. Hingson, who was commissioned in the Public Health Service in 1939, for the past year has been on a teaching and research assignment at Johns Hopkins University School of Medicine, Baltimore.

### MOVIE ON BREAST CANCER

The National Cancer Institute of the U. S. Public Health Service has granted $60,000 to the American Cancer Society to aid in the production of a movie to show women the basic facts about breast cancer, including a simple technic for periodic self inspection of the breasts. The American Cancer Society will match the grant for this film, and these funds will also finance the completion of four additional films for physicians dealing with cancer of the lung, uterus, mouth and gastro-intestinal tract. Dr. Austin V. Deibert, Chief of the National Cancer Institute Control Branch, said that the mortality rate for breast cancer, about 17,000 deaths annually, could be cut in half if women were alert to the early signs and symptoms and sought prompt medical attention for breast tumors. Announcement of the grant followed a recommendation by the National Advisory Cancer Council and approval by Surgeon General Scheele.

### MEETING OF WATER POLLUTION CONTROL BOARD

The newly appointed Water Pollution Control Advisory Board held its first meeting in Washington May 9-10, to assist in the development of a master plan for safeguarding the quality of the nation's water resources, the Surgeon General of the Public Health Service announced. The board, appointed in part by the President and in part by government department heads, reviewed policies and programs of the Public Health Service and will assist in drawing up a blueprint for the remainder of the five year program called for by the Act. One immediate problem will be the development of comprehensive programs for controlling pollution of interstate waters and tributaries. It is contemplated that the board will meet from time to time to review subsequent developments.

The Water Pollution Control Act aims to help states control pollution of the nation's streams and lakes. A comprehensive water pollution control program to be carried out jointly with the Federal Works Agency is being set up by the Public Health Service. This program is to be carried out under a broad policy laid down by Congress to recognize, preserve and protect the primary responsibilities and rights of states in controlling water pollution.

### TRAINEES FROM FOREIGN COUNTRIES

The Public Health Service reports that on Jan. 1, 1949, there were 82 trainees from 24 countries who were in the United States attending schools or working under programs administered by the Educational Programs Branch. With this training program now in its third year, 62 of the 82 trainees were physicians, 8 were public health workers and 12 were nurse trainees. Seventeen of the physicians were from the Philippine Islands, 6 from Germany, 5 from China, 4 each from Turkey and India, 2 from Syria, 1 each from Africa and Iraq and 22, the largest number, from Latin America. The physicians were receiving training in numerous fields, among others, surgery, internal medicine, maternal and child health, infectious diseases, cancer control, malariology and pharmacology.

### PERSONAL

Dr. James A. Doull, chief of the Office of International Health Relations of the Public Health Service, has been detailed to the American Leprosy Foundation (Leonard Wood Memorial) as director of research with headquarters in Washington. Studies will be made on the epidemiology of leprosy and methods of treatment. Dr. Doull was chairman of the Medical Advisory Board of the foundation from 1940 to 1943.

## MISCELLANEOUS

### POSITIONS OPEN AT ST. ELIZABETH'S HOSPITAL

The U. S. Civil Service Commission announces a medical officer examination for filling rotating intern psychiatric resident and surgical resident positions in St. Elizabeth's Hospital, Washington, D. C. The salaries for rotating interns are $2,200 for the first year and $2,400 for the second year; the salaries for psychiatric resident range from $2,400 to $4,100 a year, and for surgical resident, from $3,400 to $4,150.

Applicants for the rotating intern positions must be third or fourth year students in an approved medical school. Applicants for psychiatric resident and surgical resident positions must be graduates of a medical school with the degree of doctor of medicine, and must have completed a full year in an approved rotating internship. In addition to those requirements, applicants for appointment as surgical resident must have completed three full years as residents-in-training in surgery in an approved residency. No written test is required. The maximum age limit of 35 years is waived for persons entitled to veteran preference. Information and application forms may be obtained at most first and second class postoffices, from civil service regional offices or from the U. S. Civil Service Commission, Washington 25, D. C.

### POSITIONS OPEN IN THE CANAL ZONE

Permanent Civil Service appointments for physicians are available in the Panama Canal Medical Service, starting salaries $5,599 and $6,540 a year, free transportation to the Canal Zone provided and two months' paid vacation (including time lost by illness). The Panama Canal Health Department operates several hospitals and well equipped dispensaries and keeps constant vigilance over health conditions in the Canal Zone and Colon and Panama City. Since the number of appointments is limited, early application is suggested.

Requirements for medical positions starting at $5,599 are: graduation from an approved medical school, license to practice in a state, ability to pass a physical examination and one year's internship in a hospital approved by the American Medical Association; requirements for medical positions starting at $6,540 are the same except that a minimum of three years of postinternship experience is required. Living conditions are comparable to those in a small town in the United States except for the tropical climate. The public school system compares favorably with modern American school systems, and excellent facilities are provided for children of employees without charge from kindergarten through high school. There are churches and good highways, as well as libraries, movies, golf courses, hunting and fishing. Physicians interested should address their applications to the Chief of Office, The Panama Canal, Washington 25, D. C.

### ALLERGENS RESEARCH DIVISION

On May 15 the Honor Awards Ceremony of the Department of Agriculture was held and the Allergens Research Division of the Bureau of Agriculture and Industrial Chemistry received the following citation: "For outstanding achievement in fundamental chemical and biological research on the allergenic components of agricultural products, which has markedly advanced scientific knowledge of allergens, made possible more accurate methods for the quantitative determination of allergenic activity, and contributed significantly to wider utilization of farm commodities and to the general health and welfare."

The staff members of this unit are: Henry Stevens, Ph.D., head; Joseph R. Spies, Ph.D., and E. J. Coulson, Ph.D., biochemists; Dorris C. Chambers, M.S., chemist, and Harry S. Bernton, M.D., clinical specialist in allergy and allergist to Providence Hospital, Washington, D. C.

# Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

## ARKANSAS

**State Medical Election.**—At the annual meeting in April the following officers of the Arkansas Medical Society were elected: Drs. Euclid M. Smith, Hot Springs, president; Earle H. Hunt, Clarksville, president-elect; Paul L. Mahoney, Little Rock, treasurer, and William R. Brooksher, Fort Smith, secretary.

## CALIFORNIA

**Personals.**—Dr. Lawrence Kolb, medical director, has been appointed acting director of the state's mental hygiene department.——Dr. William C. Voorsanger, San Francisco, has received the annual award of the California Tuberculosis and Health Association for meritorious service in tuberculosis control.

**Psychiatric Fellowship.**—A twelve month fellowship has been established in the psychiatric department of the Cedars of Lebanon Hospital in Los Angeles. The fellowship carries no stipend, but room and board will be provided. Interested physicians should apply to Dr. Eugene Zisking, Director, Psychiatric Clinic, Cedars of Lebanon Hospital, 1306 N. Berendo St., Los Angeles 27.

**Mount Zion Hospital Reunion.**—Mount Zion Hospital in San Francisco Alumnae Association is planning a reunion the early part of 1950, when its new 300 bed hospital will be completed. The hospital directorate and the alumnae association would like to hear from all doctors who have served on the staff of the hospital. Replies should be addressed to Donna Osborn, R.N., 255 9th Ave., San Francisco, Evelyn Rhein, R.N., 419 Gonzalez Drive, San Francisco, or Elsie Nathan, R.N., 839 Post St., San Francisco.

**Part-Pay Referrals Reactivated.**—The Alameda County Medical Association has reactivated its "part-pay referral plan" as implementation of its published guarantee of medical care to all. The plan was first put into effect in the county in 1932, but has been dormant since 1942. A medical social service consultant has been added to the society's staff for closer coordination of the agencies whence come the majority of the part-pay referrals. The screen is set up by the social service department of the county institutions and the medical social service consultant of the association. The social worker makes no attempt to state fees; details of arrangements for payment remain with the physician.

## COLORADO

**Dr. Darley Named Vice President of University.**—Dr. Ward Darley, dean of the school of medicine, has been appointed a vice president of the University of Colorado and dean of the department of medicine, which includes the school of medicine, the school of nursing, and their teaching hospitals, Colorado General and Colorado Psychopathic. Dr. Darley's new appointment completes an administrative reorganization begun last October, when he was placed in charge of all health science services at the university's Denver Medical Center. Robert C. Lewis, Ph.D., was recently appointed dean of the school of medicine.

**Chest Roentgenographic Survey.**—The mass chest roentgenographic survey begun June 21 will extend until August 31 to include the population of the city of Denver and the three adjoining counties, Adams, Arapahoe and Jefferson. The goal is to examine 350,000 persons over 15 years of age. The project is sponsored by official and voluntary agencies and the medical societies of the four counties and will be conducted with the assistance of the U. S. Public Health Service. Facilities will be provided for a definitive diagnosis in cases with abnormal findings. The special temporary Diagnostic Center will be staffed by physicians from the community with experience in chest diseases. Patients will then be referred to their private physicians or clinic for fellow-up care.

## ILLINOIS

**Birth Rate Drops.**—There were over 11,000 fewer babies born in Illinois during 1948 than in the peak year of 1947. This and the growth of population brought the birth rate down from 22.9 to 20.9 per 1,000 population. This is considered a sharper drop than for the United States as a whole, where the 1948 rate was 24.4 and 25.8 in 1947. The natural increase in population during 1948 (births minus deaths) was 91,000 persons. The state had an appreciably lower mortality rate for almost every cause of death during 1948, and the actual number of deaths was lower despite the larger population, 10.4 for 1,000 population, the state's lowest record.

### Chicago

**Institute of Nuclear Studies.**—Across the street from the football stand where he built the first atomic pile, Enrico Fermi, distinguished service professor of physics at the University of Chicago, on June 21 laid the cornerstone for the $7,500,000 laboratory for nuclear, biologic and metallurgic research. Robert E. Wilson, chairman of the board of Standard Oil of Indiana and a trustee of the university, and Kenneth S. Pitzer, director of the Atomic Energy Commission's research division, were the principal speakers at a luncheon following the cornerstone ceremony. The four story structure, covering half a city block at 57th Street between Ellis and Drexel avenues, is designed with three wings to provide office and laboratory space for each of the four institutes of the research center. A basement and one story laboratory houses the new syncrocyclotron, which is scheduled for operation early in 1950. One of the three largest cyclotrons in the world, this $2,200,000 instrument was financed by the Office of Naval Research and public contributions to the university's Cancer Research Foundation. A 100,000,000 volt betatron for research on high energy gamma rays is located in the Accelerator Building. Many of the key men who operated the first pile are doing fundamental research in the institutes. Since 1947 twenty corporations, as industrial members of the institutes, have pledged $4,000,000 to support the program over a fifteen year period. The south corner wing of the building will be assigned to the Institute of Radiobiology and Biophysics for study of problems ranging from the nature of viruses to the fundamental processes of plant, animal and human growth. Laboratories are being built for the experimental study of micro-organisms. The Institute for Nuclear Studies, joining the Accelerator Building, will feature a two story lead-shielded laboratory for high voltage experimental research. A library, shops, drafting rooms and an optical laboratory are among the 300 rooms being set up in the institute building.

## LOUISIANA

**Geiger Medal Awarded.**—The 1949 winner of the Geiger Medal of Public Health at Tulane University, New Orleans, is Dr. Keene A. Watson, for his thesis and work concerning the Prevention of Homologous Serum Jaundice. The award, a gold medal, was presented to the university in 1929 by Dr. and Mrs. Jacob C. Geiger to be awarded to a senior or graduate student for a thesis on some public health problem of the Southern states or countries contiguous to the Southern states. Dr. Geiger, an alumnus of Tulane, is now the director of public health of the city and county of San Francisco.

**Mental Hospital Annex.**—A five story annex to De Paul Sanitarium, New Orleans, is expected to be completed by the end of 1950. The new building, which will be named Rosary Clinic, will add 100 beds to the hospital. The fifteen special therapeutic recovery rooms for the acutely ill will be sound proofed and air conditioned. Intercommunication systems will also be installed and radio facilities. The fifth floor is to be a recreation area, with special rooms, a corrective gymnasium and two roof gardens for sun baths. De Paul Sanitarium is administered by the Daughters of Charity of St. Vincent de Paul.

## MINNESOTA

**State Medical Election.**—The Minnesota State Medical Association at its meeting in St. Paul, May 9-11, chose Dr. Frank J. Elias, Duluth, as president-elect. Drs. Benjamin B. Souster, St. Paul, and William H. Condit, Minneapolis, were reelected secretary and treasurer, respectively. Drs. George A. Earl, St. Paul, and Archibald E. Cardle, Minneapolis, were elected American Medical Association delegates, with Drs. William W. Will, Bertha, and Ernest M. Hammes, St. Paul, as alternates.

**Personals.**—Dr. Ernst Gellhorn, Minneapolis, professor of neurophysiology at the University of Minnesota, has been invited to address the Royal Society of Medicine in London on September 13 on "The Physiologic Basis of Shock Therapy of Mental Diseases."——The Surgeon's General Office has awarded a Fellowship of the Mental Institute of Hygiene for research in neurology at the University of Minnesota to Captain John. W. Schut, Maple Lake, Minn., who will be discharged from the Army July 25.

## MISSOURI

**Dr. Sacks Goes to Yale.**—Dr. Ernest Sacks, formerly emeritus professor of neurologic surgery at Washington University School of Medicine, St. Louis, resigned June 1. He has accepted an appointment as research associate in physiology at Yale University Medical School, New Haven, Conn. Dr. Sacks, a graduate of Johns Hopkins University School of Medicine, Baltimore, 1904, was clinical professor of neurosurgery at Washington University 1919-1936, when he was made emeritus professor of neurologic surgery.

## NEW MEXICO

**State Medical Election.** — The New Mexico Medical Society at its annual meeting early in May installed Dr. James W. Hannett, Albuquerque, as president and chose Dr. Ira J. Marshall, Roswell, president-elect, and Dr. Harold L. January, Albuquerque, secretary treasurer.

## NEW YORK

**Hutchings Memorial Award.**—A memorial award of $100 for an outstanding contribution to psychiatry from a public mental institution has been announced by the Richard H. Hutchings Memorial Committee. The award, in memory of Dr. Hutchings, who spent his life in the state hospital field, is from an anonymous donor and is presented through Dr. C. Charles Burlingame of the Institute of Living, Hartford, Conn. The award is without restriction as to type of professional achievement. Scientific articles, reports or nominations for the award may be submitted to Dr. Harry A. Steckel, 130 Circle Rd., Syracuse 10, or to Dr. Newton Bigelow, director of the Marcy State Hospital, Marcy, and secretary-treasurer of the committee. Dr. Hutchings, who died in October 1947, was head of St. Lawrence State Hospital, Ogdensburg, and later of Utica State Hospital, and for many years taught psychiatry at Syracuse University College of Medicine.

### New York City

**Scholarships in Eye Conservation.**—Four New York University-Bellevue Medical Center physicians were awarded scholarships totaling $2,000 for research in fields related to eye conservation at a luncheon of the Lions Club of New York June 21. Mr. Walter Hoving, guest speaker at the luncheon, presented a check for the amount to the school through Dr. Daniel B. Kirby, professor of ophthalmology, New York University Post-Graduate Medical School. The check represents the fourth annual gift of the Lions Club in aid of the medical center's program of postgraduate research devoted to the alleviation and prevention of blindness.

**Personals.**—Dr. Mary M. Crawford, for many years head of the health department of the Federal Reserve Bank of New York, on June 22 received the Kappa Kappa Gamma Alumnae Achievement Award, in recognition of her contribution to the community.——Dr. Walter T. Dannreuther, professor of obstetrics and gynecology at New York Post-Graduate Medical School and Hospital, was presented the Alumni Medallion for distinguished service to American Medicine at the annual commencement program of the Long Island College of Medicine last month. Dr. Dannreuther was a graduate in the class of 1906. ——Dr. Tibor de Cholnoky lectured at the Curie Institute in Paris on June 22 on "Surgical Treatment of Malignant Tumors of the Face." Dr. Cholnoky will return after Labor Day.

**Lectures in Biochemistry.**—Four Nobel prize winners and other leaders in the field of biochemistry and related sciences are scheduled to lecture at the New School for Social Research next fall. The lectures are part of an expanded program, which includes six courses on biochemistry offered as a public service without fee and given jointly by the New School and the Institute for Muscle Reseach under the direction of Dr. Albert Szent Gyorgyi. The other Nobel prize winners who will lecture are Dr. Otto H. Warburg of the Institute for Muscle Research, Dr. Otto Loewi, now research professor of pharmacology, New York University College of Medicine, and Dr. Otto Meyerhof, research professor in physiology, University of Pennsylvania, Philadelphia. The courses, of seven to sixteen weeks each, are of two kinds. The first two, "Dynamics of Living Things" and "Dynamics of Muscle as a Living System," are addressed primarily to laymen, and it is in the first of these courses that the Nobel prize winners will appear. The remaining courses are designed especially for physicians and other scientists. These courses include "Biochemistry of Muscle," "Blood and Some Aspects of Its Functions," "Elementary Introduction to Quantum Mechanics and Some Biological Applications" and "Quantum Chemistry and Its Biological Applications." Drs. Andrew Paul, Ephraim Shorr and Harold G. Wolff join Drs. Kalman Laki and Stephen Rath and other members of the staff of the institute in giving the course, "Blood and Some Aspects of Its Functions."

## NORTH CAROLINA

**North Carolina Medical Foundation.**—More than 200 physicians and laymen met at the University of North Carolina, Chapel Hill, May 28 and set up the Medical Foundation of North Carolina, the chief purpose of which is to create an endowment "to promote, by financial assistance and otherwise, all types of education, service and research in the fields of preventive and curative medicine at the medical and dental schools of the University; and to render assistance to industry, business and agriculture and to agricultural and industrial workers, through various programs designed to improve rural and urban health." Mayor L. P. McLendon, Greensboro attorney, was elected president of the foundation.

**Annual Pediatric Seminar.**—The annual Southern Pediatric Seminar will be held at Saluda, July 18-30, with Dr. Samuel F. Ravenel, as dean. This comprises a graduate course in diagnosis, prevention and treatment of diseases of children, designed primarily for general practitioners. Lecturers, who serve without compensation, represent most universities in the South. The registration fee is $25. The program lists the following physicians as special lecturers: Joseph R. Bowman, Johnson City, Tenn.; James G. Hughes, Memphis, Tenn.; Weston M. Kelsey, Winston-Salem, N. C.; J. Howard Stokes, Florence, S. C.; William A. Reilly, Little Rock, Ark.; C. Nash Herndon, Winston-Salem, N. C., and John W. R. Norton, Raleigh, N. C., and Frank Lammons, D.D.S., Atlanta, Ga.

## OKLAHOMA

**Medical Research Foundation.**—Construction has started on the main building of the Oklahoma Medical Research Foundation, which is to be located adjacent to the Oklahoma School of Medicine in Oklahoma City. The three story building is to be completed in June 1950. Fund raising was begun in 1947, and over $2,000,000 of the $3,000,000 goal has been pledged. The site was donated in 1947. The idea of the research foundation began with a small group of the alumni of the Oklahoma School of Medicine in 1944. Sir Alexander Fleming was the principal speaker at cornerstone-laying exercises and participated in the AMA-NBC radio broadcast of dedication ceremonies July 2.

## WEST VIRGINIA

**New State Board of Health.**—Governor Patteson has announced the appointment of members of the new State Board of Health, created by the legislature this year. The bill was sponsored in the legislature by the state medical association. Dr. Paul E. Prillaman, Ronceverte, was appointed a member for a nine year term. Eight other members were appointed for terms as follows: J. Stanley Turk, Wheeling, hospital representative, eight years; Dr. Russel B. Bailey, Wheeling surgeon, seven years; E. O. Wiseman, Fayetteville pharmacist, six years; Mrs. Katherine M. Fisher, Moorefield, citizen representative, five years; Roy W. Eshenaur, osteopathic physician, Point Pleasant, four years; William M. Jarrett, Charleston dentist, three years; J. D. Evans, Logan, citizen representative, two years, and Dr. Peyton R. Higginbotham, Bluefield physician, one year. Dr. Newman H. Dyer is the present state health commissioner. On July 1 his title was changed to state director of health; he will serve as the executive officer of the State Board of Health.

**State to Register All Physicians.**—The registration of all doctors in West Virginia was undertaken by the state health department when the new biennial registration law became effective July 1. The registration fee is $2 for a two-year period. The program will be supervised by the new eleven-member Medical Licensing Board. The biennial registration is provided for under the provisions of H.B. 134, passed by the legislature at the regular session in 1949. The bill was sponsored by the West Virginia State Medical Association and was passed without opposition in the legislature.

Licenses of physicians who fail to comply with the new act will be automatically canceled by the board, and continued practice after cancellation will be construed as practicing without a license. Doctors who fail to receive the blank application for registration by July 6 are requested to bring the matter to the attention of the state health department so that duplicate forms may be mailed. Communications concerning registration should be addressed to Dr. N. H. Dyer, State Health Department, Charleston 5, W. Va.

## GENERAL

**University of Innsbruck.**—All graduates or former associates of the University of Innsbruck, Austria, are requested to send their addresses to the "Rektorat der Universitaet Innsbruck (Doktoren-Kollegium), 52 Innrain, Innsbruck, Tyrol, Austria," in order that they may be sent university bulletins.

**Nurses and Poliomyelitis.**—An appropriation of $10,000 from the National Foundation for Infantile Paralysis will assist the American Nurses Association to establish an inventory of registered nurses. During poliomyelitis epidemics it is essential to recruit large numbers of nurses. The usefulness of such an inventory will not, however, be limited to poliomyelitis. Data will be obtained concerning education and special preparation and experience in all nursing fields.

Continuance of advisory service to public health agencies and hospitals in nursing care of the infantile paralysis patient and planning for possible poliomyelitis epidemics was assured with the announcement June 29 of a March of Dimes grant of $64,718 to the National Organization for Public Health Nursing. Thirteen cities and towns in North Carolina and five in California were visited during last year's poliomyelitis outbreak as part of this service. This year conferences on nursing care have been held at San Francisco, Cincinnati and Kenosha, Wis.

**Foundation Allocates March of Dimes Funds.** — The National Foundation for Infantile Paralysis announced June 30 that almost $2,000,000 additional March of Dimes funds to step up research and professional education in the field of poliomyelitis have been allocated to various research laboratories and institutions throughout the nation. The midyear grants and appropriations bring to more than $2,500,000 allocated by the foundation for research and education projects this year, and the total since establishment of the organization in 1938 to more than $25,600,000. Thirteen medical schools and institutions from coast to coast share the new grants for virus research.

An appropriation of $20,000, to be administered by National Foundation headquarters, will be used to determine the role of flies in the transmission of human poliomyelitis. The $96,566 for the study of after-care of infantile paralysis patients was allocated among eight medical schools and hospitals. Appropriations for professional training, totaling $680,000, included $225,000 for physical therapy scholarships, $100,000 for scholarships in medical social work, $100,000 for fellowships in physical medicine and $50,000 for fellowships in the training of physicians in public health.

**Exchange Fellowships in Cancer Research.**—The American Cancer Society in conjunction with the British Empire Cancer Campaign is offering a number of British American Exchange Fellowships in Cancer Research. These fellowships, awarded by the society on the recommendation of the Committee on Growth of the National Research Council, are offered to the citizens of the United States for advance training and experience in Great Britain, where opportunities exist for study in facets of research in malignant disease not widely available in this country. Similar fellowships are awarded by the British Empire Cancer Campaign to British scientists for study in the United States. Fellowships are open to citizens in the United States who possess a degree of Doctor of Medicine, Doctor of Philosophy or Doctor of Science. They are intended for young men and women embarking on a career in clinical medicine or basic research, and also for more mature candidates desiring to extend their fields of competence in these subjects. Applications should state the institution where the fellow plans to work in Great Britain, the person under whom the fellow desires to work, what problems he intends to investigate and when he wishes to start. The annual stipend will be £1,000 ($4,020). An allowance of $600 is made for travel to the site of the fellowship. University staff appointment with teaching duties agreeable to the fellow is permitted, provided it carries no additional salary and provided it is acceptable to the Committee on Growth, the American Cancer Society, and the British Empire Cancer Campaign. No other remunerative work will be permitted during the tenure of the fellowship.

**Psychological Research Council for the Blind.**—This group has been organized to encourage, initiate and coordinate on a voluntary basis research to help the blind in effecting personal, social and vocational adjustment. Michael J. Shortley, Washington, D. C., director of the Federal Security Agency's Office of Vocational Rehabilitation, announced the formation of the committee and stated that he is requesting that it serve in a consultative capacity. At the second meeting of the council in Washington, D. C., on May 16-17 Dr. Samuel P. Hayes, director of research at the Perkins Institution and the Massachusetts School for the Blind, Watertown, Mass., was elected chairman; Wilma Donahue, director of the Bureau of Psychological Services in the Institute for Human Adjustment, University of Michigan, Ann Arbor, was chosen vice chairman-elect. Salvatore G. DeMichael, psychologic consultant, Office of Vocational Rehabilitation, Washington, D. C., was elected secretary. Other members are: Mrs. Harry H. Bauman, Philadelphia; Gabriel Farrell, Watertown, Mass.; Berthold Lowenfeld, Berkeley, Calif.; Lorenz A. Meyer, Washington, D. C.; Mr. Stanley Potter, St. Paul; Mr. Harry E. Simmons, Tampa, Fla., and C. R. Strother, Seattle, Wash.

**Prevalence of Poliomyelitis.**—Reports of cases of poliomyelitis for the periods indicated have been received from the Division of Public Health Methods, U. S. Public Health Service:

| | Week Ended | | | Total to | | Total * | |
|---|---|---|---|---|---|---|---|
| Division and State | June 25, 1949 | June 26, 1948 | Median 1944-48 | June 25, 1949 | June 26, 1948 | March 19-June 25, 1949 | March 20-June 26, 1948 |
| New England States: | | | | | | | |
| Maine | 1 | 0 | 0 | 11 | 0 | 11 | 0 |
| New Hampshire | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vermont | 0 | 0 | 0 | 3 | 1 | 1 | 0 |
| Massachusetts | 4 | 2 | 0 | 32 | 5 | 32 | 2 |
| Rhode Island | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Connecticut | 1 | 1 | 1 | 8 | 2 | 5 | 1 |
| Middle Atlantic States: | | | | | | | |
| New York | 7 | 3 | 7 | 56 | 69 | 36 | 33 |
| New Jersey | 5 | 7 | 2 | 69 | 43 | 33 | 36 |
| Pennsylvania | 2 | 1 | 1 | 27 | 29 | 17 | 18 |
| East North Central States: | | | | | | | |
| Ohio | 0 | 5 | 5 | 13 | 31 | 7 | 22 |
| Indiana | 2 | 7 | 2 | 24 | 39 | 14 | 29 |
| Illinois | 3 | 3 | 3 | 44 | 27 | 28 | 20 |
| Michigan | 8 | 2 | 1 | 48 | 20 | 21 | 14 |
| Wisconsin | 2 | 4 | 0 | 23 | 6 | 9 | 6 |
| West North Central States: | | | | | | | |
| Minnesota | 16 | 3 | 3 | 72 | 22 | 33 | 14 |
| Iowa | 4 | 4 | 1 | 38 | 73 | 25 | 60 |
| Missouri | 7 | 1 | 1 | 30 | 12 | 19 | 12 |
| North Dakota | 9 | 0 | 0 | 19 | 3 | 15 | 3 |
| South Dakota | 2 | 1 | 0 | 41 | 22 | 19 | 22 |
| Nebraska | 3 | 4 | 1 | 28 | 33 | 15 | 28 |
| Kansas | 2 | 3 | 2 | 35 | 16 | 9 | 13 |
| South Atlantic States: | | | | | | | |
| Delaware | 0 | 0 | 0 | 10 | 1 | 8 | 0 |
| Maryland | 1 | 0 | 0 | 14 | 1 | 5 | 0 |
| District of Columbia | 0 | 0 | 0 | 3 | 0 | 2 | 0 |
| Virginia | 1 | 7 | 0 | 13 | 19 | 3 | 17 |
| West Virginia | 3 | 0 | 0 | 28 | 6 | 21 | 1 |
| North Carolina | 5 | 64 | 4 | 55 | †268 | 28 | †244 |
| South Carolina | 3 | 6 | 2 | 23 | 23 | 10 | 15 |
| Georgia | 2 | 6 | 4 | 22 | 23 | 14 | 22 |
| Florida | 12 | 2 | 2 | 72 | 51 | 50 | 34 |
| East South Central States: | | | | | | | |
| Kentucky | 4 | 3 | 2 | 24 | 15 | 16 | 12 |
| Tennessee | 10 | 2 | 1 | 29 | 19 | 23 | 12 |
| Alabama | 11 | 3 | 3 | 51 | 29 | 38 | 17 |
| Mississippi | 9 | 3 | 2 | 65 | 12 | 54 | 10 |
| West South Central States: | | | | | | | |
| Arkansas | 42 | 4 | 1 | 98 | †17 | 87 | †15 |
| Louisiana | 4 | 3 | 3 | 48 | 32 | 36 | 26 |
| Oklahoma | 47 | 6 | 3 | 146 | 20 | 139 | 16 |
| Texas | 113 | 78 | 39 | 668 | 579 | 577 | 558 |
| Mountain States: | | | | | | | |
| Montana | 1 | 1 | 0 | 8 | 15 | 7 | 5 |
| Idaho | 9 | 1 | 0 | 43 | 45 | 30 | 18 |
| Wyoming | 1 | 2 | 0 | 5 | 4 | 5 | 4 |
| Colorado | 3 | 1 | 2 | 16 | 7 | 14 | 5 |
| New Mexico | 7 | 0 | 0 | 16 | 6 | 15 | 4 |
| Arizona | 3 | 1 | 0 | 18 | 9 | 7 | 8 |
| Utah | 0 | 0 | 0 | 51 | 9 | 35 | 6 |
| Nevada | 0 | 0 | 0 | 2 | 1 | 2 | 0 |
| Pacific States: | | | | | | | |
| Washington | 6 | 3 | 2 | 67 | 37 | 22 | 19 |
| Oregon | 4 | 0 | 0 | 43 | 24 | 27 | 8 |
| California | 30 | 62 | 18 | 458 | 281 | 169 | 249 |
| Total | 409 | 309 | .... | 2,718 | †2,006 | 1,794 | †1,658 |
| Median, 1944-48 | ... | ... | 125 | 1,124 | | 718 | |

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* Last two columns show reported incidence since approximate average seasonal low date: 14 weeks.

† Figures changed by corrected reports.

## Marriages

Alexander Charles Mitchell, New York, to Miss Charlotte Christine Beckwith of Riverdale, N. Y., June 4.

Wendell Howard Tiller, Spartanburg, S. C., to Miss Martha Estelle Ivey of Albemarle, N. C., May 28.

Roy Alexander McCall to Miss Grace Runyan, both of Sevierville, Tenn., June 1.

Wilson David Rees, Girard, Ohio, to Miss Janet Ann Wilder of Lucasville, May 28.

# Deaths

**Ray Lyman Wilbur** ⊕ President of the American Medical Association in 1923-1924, died of heart failure at his home in Palo Alto, Calif., June 26, aged 74. Dr. Wilbur was born in Boonesboro, Iowa, April 13, 1875, and moved to California in his youth. He graduated from Riverside High School, and received an A.B. degree from Leland Stanford Junior University, San Francisco, in 1896 and while serving as instructor in physiology the following year received an A.M. degree. In 1899 he graduated from Cooper Medical College of San Francisco, which in 1908 became the medical department of Leland Stanford University but retained its title until 1912. He was lecturer and demonstrator in physiology at Cooper Medical College from 1899 to 1900, and assistant professor of physiology from 1900 to 1903, when he went to Europe to study at Frankfurt, Germany, and London.

He then practiced medicine in San Francisco and in 1909 again went abroad to study at the University of Munich. He was appointed professor of medicine in the medical school of Stanford University in 1909 and in 1911 became dean of the medical faculty. On the retirement of president John Casper Branner in 1915, the trustees of Stanford University, in recognition of his extraordinary administrative ability, selected Dr. Wilbur to be president of the university, in which position he served with great distinction until he became chancellor in 1943. With the entrance of the United States into World War I, he was appointed chief of the Conservation Division of the United States Food Administration and for this work earned the gratitude of the civilized world.

Dr. Wilbur in 1920 was appointed to the Council on Medical Education and Hospitals of the American Medical Association, and, after the retirement of Dr. Arthur Dean Bevan, he served as chairman of the Council from 1929 until 1946. He had a prominent part in the expansion of the activities of the Council as a standardizing agency of medical schools, hospital internships and residencies and in the planning of graduate medical education. Dr. Wilbur further served the American Medical Association as Chairman of the Section on Pharmacology and Therapeutics in 1912 and 1913 and as delegate in 1914 and 1915. In the Association of American Medical Colleges he served as president in 1925 and for many years was on the executive council. From 1923 to 1940 he was trustee of the Rockefeller Foundation and a member from 1930 to 1940 of its general education board.

When Herbert Hoover became president of the United States, in 1929, he selected Dr. Wilbur to be Secretary of the Department of the Interior. From 1927 to 1935 he was chairman of the Committee on the Cost of Medical Care and author of its "First Three Years' Work." From 1929 to 1931 Dr. Wilbur served as chairman of the White House Conference on Child Health and Protection. He was honorary president and for many years president of the American Social Hygiene Association, which in 1943 awarded him the William F. Snow Medal. Honorary degrees were bestowed on Dr. Wilbur by the Universities of California, Arizona, Illinois, Pennsylvania, New Mexico, Pittsburgh, Chicago, Maryland, Duke, Princeton and Rochester, Puerto Rico, New York and Yale, the University of the State of New York, University of Southern California, Tusculum College and Wesleyan and Dartmouth colleges. Syracuse University in 1924 and Western Reserve University in 1931 conferred on him the degree of Doctor of Science. In 1920 he received the decoration of Commander, Order of Leopold II, and Chevalier French Legion of Honor, and in 1925 the Honor Cross of the German Red Cross. He was chairman of the Medical Council of the U. S. Veterans Bureau from 1924 to 1929 and in 1928 was the United States delegate to the sixth Pan American Conference in Havana. Dr. Wilbur served on the California State Board of Medical Examiners in 1902 and 1903, and in 1912 and 1913 was president of the American Academy of Medicine and in 1917 of the California Academy of Medicine. He was a fellow of the American Association for the Advancement of Science, a trustee of the Austin Riggs Foundation since 1944 and of the Nutrition Foundation since 1942; member of the medical advisory board of the American Leprosy Foundation since 1936; chairman of the Citizens Committee on Student Nurse Recruitment from 1944 to 1946, of the Baruch Committee on Physical Medicine since 1943 and of the advisory committee Army Specialized Training Program since 1943; consultant Navy College Training Program since 1943; member of the Youth Advisory Committee, U. S. Office of Civilian Defense, from 1943 to 1946, and of the California State War Problems Board, 1944-1946; since 1936 chairman of the American Institute of Pacific Relations; member of the National Executive Committee, Boy Scouts of America from 1939 to 1945 and member of the advisory council since 1945; chairman of the health committee of the Boys Clubs of America since 1940; president of Motion Pictures Research Council since 1935, and from 1939 to 1945 president of the California Physicians Service. He was a member of the Phi Beta Kappa and Sigma Xi societies, and since 1928 had been a director of Alpha Omega Alpha Honor Medical Society. He was the author of "Hoover Policies," 1937; "March of Medicine," 1938; "Human Hopes," addresses and papers on education, citizenship and social problems, 1940.

Dr. Ray Lyman Wilbur was recognized as a progressive thinker in the fields of education, medicine and statesmanship. His ability to speak forthrightly earned for him admiration and support. His philosophical observations, warmed by a tender humor, made him popular with public and press. Among great leaders in medicine of his generation his fame makes him among the greatest.

Ray Lyman Wilbur, M.D.

**Nejib George Barbour** ⊕ Brooklyn; University of Istanbul Medical Faculty, Turkey, 1889; died in Long Island College Hospital May 25, aged 83.

**Peter Joseph Christenson,** Chicago; Jenner Medical College, Chicago, 1904; died May 19, aged 71, of pulmonary tuberculosis and chronic myocarditis.

**William Marshall Dobson** ⊕ Groton Long Point, Conn.; Tufts College Medical School, Boston, 1907; member of the Massachusetts Medical Society, American Psychiatric Association and the New England Society of Psychiatry; specialist certified by the American Board of Psychiatry and Neurology; served during World War I and II; formerly affiliated with various Veterans Administration hospitals; died May 4, aged 65, of coronary thrombosis.

**Daniel Webster Eiss,** Evanston, Ill.; Chicago Medical College, 1889; member of the American Medical Association; died in Evanston Hospital May 21, aged 89, of coronary thrombosis.

**Hans I. Guggenheimer** ⊕ Cleveland; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1910; died March 12, aged 62.

**David Gaston Harvey,** Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1894; died in Hahnemann Hospital May 27, aged 76.

**John Miller Jean,** Keene, Ky.; Hospital College of Medicine, Louisville, 1898; member of the American Medical Association; died suddenly, April 29, aged 83, of coronary occlusion.

**Francis Joseph McCue Jr.,** Adrian, Mich.; University of Michigan Medical School, Ann Arbor, 1935; member of the American Medical Association; served during World War II; died April 26, aged 41.

**Charles Harold Soll,** Stanwood, Wash.; College of Physicians and Surgeons of San Francisco, 1904; Jefferson Medical College of Philadelphia, 1908; died March 28, aged 75.

# Foreign Letters

## PARIS

*(From Our Regular Correspondent)*

May 15, 1949.

### New Treatment of Chronic Gastritis

H. Cattan and P. Frumusan (Tenon Hospital) propose a new method of treatment of chronic gastritis with synthetic antihistaminics. In a series of cases of chronic, edematous erosive gastritis, resistant to other treatments, 3277 R.P. (phenergan,® N-[2-dimethylamino-n-propyl] phenothiazine hydrochloride), taken in daily dose of 2 to 3 tablets of 0.025 Gm. before the two principal meals, procured a rapid and lasting recovery. Gastroscopic control showed the rapid disappearance of lesions. In a serious case, with continual cramp, vomiting, anorexia and emaciation in which gastroscopy has shown a stomach intolerant to air with hypersecretion and much edema, pains completely disappeared from the absorption of the first tablet of phenergan® (effect still lasting after five months). The appetite has returned, and loss of weight has stopped; the treatment lasted fifteen days only, and no functional sign of gastritis has reappeared. Gastroscopy has shown a normal mucosa. On March 14, 1949, at the same meeting of the society of gastroenterology, the authors reported a similar effect in edematous and painful esophagitis. Debray and Pergola have reported similar occurrences to the society of allergy. This often spectacular action of synthetic antihistaminics on gastritis is attributed by Cattan and Frumusan to the double pharmacodynamic effect of local anesthetic and modifier of the vascular permeability. Probably the first of those acts directly on the gastric mucosa, the almost immediate discontinuance of pains being compared to the effect obtained by the ingestion of procaine hydrochloride solutions. But, above all, it is by the diminution of the capillary permeability that phenergan® ought to act on the edema, an essential element of gastritis, whatever its cause. The authors consider that phenergan® is the most effective treatment of gastritis with predominance of hypersecretion and edema.

### Research on Recurrent Fever

Heretofore, it has not been possible to preserve in the laboratory, after an epidemic has subsided, a strain of Treponema recurrentis and, except for the monkey, no animal was considered sufficiently sensitive for its conservation. Thus, all experimental research was limited to the period of an epidemic. H. Baltazard, B. Seydian, Mofidi and Bahmanyar of the Iran Pasteur Institute have shown the high receptivity of newborn rodents. They chose the young rabbit, of a receptivity at least equal to that of the monkey, which has allowed them to keep a strain of T. recurrentis, R. XXIII, since May 31, 1947. Selected among the 15 strains isolated from human beings, the rest of which, after identification and some experiments, were left out in order to economize on rabbits, R. XXIII after 140 passages has retained all its characteristics: very weak pathogenicity for the white rat and the mouse, practically none for the guinea pig and the adult rabbit and very high pathogenicity for man, provoking violent and prolonged fits (confirmed by two contaminations in the laboratory). It has also been used for the pyretotherapy of patients with general paralysis; 25 subjects were inoculated after passages in the newborn rabbit or the louse from three and a half to twenty months after isolation. For the sake of security, all strains have been maintained by passage in the newborn rabbit every four or five days and also in lice infected on the rabbit. Research studies of 9 strains proved that every strain immunizes perfectly against itself, but does not immunize, or confers only a very weak resistance, against other strains; thus, the subject who has had epidemic recurrent fever is not immunized, as every new contamination will make him face a strain antigenically different than the first. The authors have brought to the fore a seasonal cycle in the virulence as regards man, a gradual abatement as from the end of the summer and the reappearance at the beginning of February of strains showing no modification in the newborn rabbit and the louse; this cycle depends, then, on biologic causes, similar to those admitted for most of epidemic infections. On the other hand, the authors confirmed the negative phase in the louse, described by Nicolle and his co-workers.

### Treatment of Infectious Anuria

Since the first case of anuria successfully treated by repeated "exsanguination transfusions" (Vallery-Radot, P.; Milliez; Laroche; Lhermitte, and Levasseur: *Bull. et mém. Soc. méd. d. hôp. de Paris* 65:908-915 [July] 1948) several similar observations have been published by (Tzanck and Dausset; Dérot, Tanret and their co-workers; Lian, Siguier, Crosnier, Savoie and Poullain). All these cases have been published in the *Bulletins et mémoires de la Société médicale des hôpitaux de Paris* in 1948 and 1949.

This method, which in France is usually called "méthode de Bessis," has been specially applied to the acute nephritis observed in septicemia due to Clostridium perfringens, a disease which seems more frequent in Europe than in the United States. Such a septicemia is generally controlled by penicillin, but this treatment does not prevent the development of anuria, which is considered the consequence of massive hemoglobinemia. Even when the blood cultures become negative soon after the beginning of the treatment, the anuria leads to death in nearly all cases. On the contrary, 5 cases have been published (and 2 unpublished have been observed by Pasteur Vallery-Radot and his co-workers) with cure obtained by the Bessis method: 5 to 8 liters of citrated blood are injected intravenously, and at the same time an equal quantity of blood is taken from the other arm. The operation is done once every day or once every other day, as long as the anuria persists (sixteen days in the first case published). The method can be supplemented by the use of an artificial kidney or by peritoneal irrigation.

### Compulsory BCG Vaccination

On April 8, 1949, the National Assembly passed a bill requiring antituberculous vaccination with BCG, save for recognized contraindications, for the following members of the population: (1) infants and babies staying with wet nurses, in crèches and day nurseries; (2) children living in the same home with a tuberculous person, receiving on this account prestations from the social security funds; (3) children of school age attending certain institutions; (4) students reading for physics, chemistry, biology, medicine and dentistry, student nurses, health visitors and midwives; (5) personnel of public and private health institutions, public administrations, commercial and industrial enterprizes and particularly persons working in unsanitary environments or handling foodstuffs; (6) soldiers, sailors and airmen. Persons coming under the bill will be vaccinated only if their skin reaction is negative, but babies might be vaccinated notwithstanding this. Persons over 30 years of age will not be subjected to compulsory vaccination. Vaccination will be carried out free of charge in centers organized by the Ministry for Public Health and Population, but persons affected by the law may be vaccinated at their own expense and they will be subject to control. Anybody who refuses to submit himself or the persons under his care or guardianship to the prescriptions of the law or interferes with its execution may be fined.

### Death of Félix d'Herelle

Félix d'Herelle died Feb. 22, 1949, at the age of 76. Born in Montreal, he received his B.A. degree in France, and pursued his medical studies in Canada. In 1901, he was promoted to professor of bacteriology in Guatemala and in 1908 in Mexico. From 1909 to 1921, he was associated with the Pasteur Institute, where, in 1917, he discovered the bacteriophage. In 1921, he was in Indo-China; from 1922 to 1923 he was "professeur extraordinaire" at Leyde University; from 1924 to 1925, he was a member of the maritime sanitary and quarantine council of Egypt. From 1928 to 1933, he was professor of protobiology at Yale University. Between 1934 and 1936, he founded Institutes of Bacteriophages at Kiev, Tiflis and Kharkov. Having had to leave Paris during the occupation, he returned in 1947; he attended the thirtieth commemoration of the discovery of the bacteriophage, organized by the Society of Microbiology at the Pasteur Institute. In November 1948, he was awarded, by the Academy of Sciences, one of the most important prizes: Petit d'Ormoy's Prize. He has been a great worker, endowed with great intelligence and intuition.

## BRAZIL

*(From Our Regular Correspondent)*

RIO DE JANEIRO, June 10, 1949.

### American Trypanosomiasis in Minas Gerais

American trypanosomiasis (Chagas' disease) is a rural endemic disease of the tropical and subtropical zones of the Americas, from Argentina and Chile to Mexico, a disease which is getting more and more important every day. In Brazil the Trypanosoma is known to exist at present in 12 of the 20 states, but the geographic distribution of the most important Triatoma vectors covers almost all the Brazilian territory. The disease in these cases, as a rule, is not diagnosed, or is labeled as some other disease, owing to the difficulty of the recognition of the acute disease and the lack of laboratory facilities in several states for blood cultures, inoculations and xenodiagnosis tests indispensable for the characterization of chronic disease. With an area of 227,000 square miles and a present population of 7,200,000, the state of Minas Gerais is one of the most important foci of trypanosomiasis in Brazil, as there are eight areas where cases have been repeatedly discovered. In a study of the prevalence of the disease in the state, Dr. J. Pellegrino, of the field staff of the Oswaldo Cruz Institute, and Dr. M. Borrotchin, of the Institute of Biology, University of Minas Gerais, investigated 181 unselected inmates of the Misericordia General Hospital of Bello Horizonte, to which patients come from surrounding rural districts. The 181 patients were subjected to a general examination and such special examinations as electrocardiography, complement fixation tests with Schizotrypanum cruzi culture antigen (Machado's reaction), Wassermann test, xenodiagnosis with Triatoma infestans nymphs, and chest radiography in patients with heart trouble of any kind.

Of the patients studied, 20.4 per cent had positive reactions to laboratory tests for Chagas' disease and 27.1 per cent had heart trouble with the following causes: American trypanosomiasis 18 cases; arteriosclerosis 13 cases; hypertension 12 cases; syphilis 6 cases; rheumatic fever 3 cases; congenital heart disease 1 case, and chronic cor pulmonale 1 case. Of the 37 patients with trypanosomiasis, 48.6 per cent showed evidence of myocardial damage. The most frequent electrocardiographic changes were right bundle branch block, ventricular premature beats, alterations of the QRS wave (single or associated to alterations of the T wave), auriculoventricular blocks. These findings are similar to those previously described in chronic Chagas' heart disease by Dias, Nobrega and Laranja. Exactly half of the patients with chronic trypanosomiasis were under 30 years of age, and 80.3 per cent of the patients with heart lesion from other causes than Chagas' disease were over 30 years. The complement fixation test proved to be very useful for the laboratory diagnosis of chronic Chagas' disease. The result of xenodiagnosis was positive in 8 out of 31 patients (25.8 per cent) with positive reactions to complement fixation tests.

The authors believe that trypanosomiasis is one of the most important factors of heart disease in the rural districts of Minas Gerais.

### The Work Against Plague

Plague is one of the principal public health problems of Brazil. It is endemic in a large section of the country, and a great number of cases still occur. The first chapter in the history of plague in Brazil began with the invasion in 1899 and ended in 1938, when the last scattered cases were registered in the southern part of the country (Rio de Janeiro and São Paulo). From 1939 to the present the disease has been reported only in the rural sections of the Northeast (the bulge: Piauhy, Ceará, Parahyba, Pernambuco, Alagoas, Sergipe and Bahia). From 1939 to 1943, 769 cases in human beings were registered (annual average 154). In the five years ending with 1948 the number of cases increased to 1,153 (annual average 231), including 386 in 1948. The bulk of last year's cases occurred in the interior of the state of Bahia (259 cases). The fatality rate is not high in Brazil and is decreasing progressively with the introduction of the sulfonamide drugs, complemented by the adequate use of vitaminic and antitoxic therapeutics. In 1934 the fatality rate was 33 per cent, and in 1947 and 1948 it was 13 per cent.

The Plague Division of the National Department of Health has 40 physicians, 40 laboratory technicians, 1,300 inspectors and the necessary personnel of clerical workers, drivers and helpers. The organization includes a central administrative and epidemiologic office in Rio de Janeiro and 26 field districts. In each district, with a local office and a field laboratory, a program of four main points is carried out: isolation and medical assistance of patients, rat destruction measures, ratproofing of dwellings and health education of the people. Besides its work in the 202 counties in the endemic region, the Plague Division is in charge of the defense of the harbors and cities. Among the recent improvements in the antiplague work is the use of avirulent live immunizing material instead of the old Haffkine type of vaccine.

The principal activities of the Plague Division during 1948 were: house inspections, 3,607,279; rat traps set, 6,600,470; doses of poison distributed, 10,817,287; applications of cyanogas, 6,707,705; applications of flame throwers, 283,796; applications of DDT, 3,823,977; rats destroyed, 2,516,029; ratproofing improvements enforced, 3,000,168; laboratory examinations, 902,827; rats classified, 855,764, and rats autopsied, 737,371.

### Institute of Malariology

An Institute of Malariology has been inaugurated at Sarapuhy, Rio de Janeiro, 20 miles from the boundary of the federal district, as a dependency of the Malaria Division of the National Department of Health. The Institute is composed of four sections: epidemiology, entomology, sanitary engineering and technical training of personnel. It is located in the coastal lowlands of Guanabara bay, where malaria is prevalent, and important engineering and medical activities against the disease are being carried out with great intensity. Dr. Lewis W. Hackett, Assistant Director of the International Health Division of the Rockefeller Foundation, delivered the address, emphasizing the importance of the creation of the Institute of Malariology. Dr. Hackett was the chief of an American technical mission which, twenty-five years ago, started the study of malaria problems in the same region where the Institute is now located.

# Correspondence

## INSTITUTE OF APPLIED BIOLOGY

*To the Editor:*—An article entitled "Cancer and the Need for Facts" that appeared in The Journal (January 8, p. 93) contained a number of unwarranted statements derogatory to the research of Dr. Emanuel Revici and the Institute of Applied Biology. These statements were based on a correspondence item published in The Journal on Aug. 18, 1945 (p. 1186).

We have in our possession and submit conclusive documentary evidence from a majority of these signers that completely contradicts their published unfavorable correspondence. Accordingly, the statements that appeared in The Journal were without justification if based on these alleged facts.

Such unwarranted propaganda against a research program on cancer carried on sincerely "not for profit" can only impede much needed progress in this difficult field.

The Institute of Applied Biology, 54 Greene Avenue, Brooklyn, is a non-profit, tax exempt membership corporation incorporated in April 1947, under the laws of the State of New York. It derives its support from voluntary contributions to the Cancer Research and Hospital Foundation which is composed of a group of prominent citizens of New York City. The Institute has as its objective the scientific and clinical investigation of the role of lipids in normal and abnormal cellular metabolism. Part of that program involves the study of the chemotherapeutic effect of lipids and various polar-nonpolar substances upon the course of the disease in patients suffering from cancer. The Institute accepts only cases in advanced stages of cancer, biopsy proven, which are no longer amenable to surgery, x-ray or radium. All patients are treated entirely without charge either for examination, treatment or medication.

Documented case histories and scientific data will be submitted by the staff of the Institute to appropriate journals for publication as the work progresses. The results thus far obtained demand continued investigation.

Abraham Ravich, M.D., Director,
Institute of Applied Biology, Inc., Brooklyn.

## "THE INTERNE"

*To the Editor:*—In the May 14 issue of The Journal there appeared a copy of a letter sent to the Association of Internes and Medical Students protesting the stand taken by its Convention on Health Insurance. It was prefaced by an editorial which can hardly be matched for its calumny and gross misstatement of facts.

The letter, the editorial stated, protested a recent statement, "made in *The Interne*, a magazine said to be the publication of the interns' organization." It continued, "Apparently this organization includes relatively few interns and residents but claims to represent them all."

*The Interne*, as can easily be ascertained by glancing at its cover, is the journal of the Association of Internes and Medical Students. The A.I.M.S. has never, and very obviously can never, claim to represent any but its own membership. It is possible that what has been confused is the fact that A.I.M.S. fights for the benefits of all interns and residents.

The editorial goes on to state, ". . . their [the authors of the letter] side of the story will not be published in *The Interne*." It must be immediately pointed out that it is a matter of A.I.M.S. policy to circulate all letters addressed to the organization among the members of the National Executive Committee before any action is taken. Significantly, a similar letter received from the Student Council of the University of Arkansas, that was addressed to the editor, is published with his answer in the June edition of *The Interne*.

*The Interne* through the years has opened its pages, though these are limited, to all points of view on controversial issues. In the field of health insurance, which is only one of its many interests, there have appeared articles by Dr. Frederick W. Williams of the National Physicians Committee and by Dr. Harvey B. Stone, Dr. Charles Austrian and Dr. Arthur M. Shipley. These men are all well known for their opposition to governmental health insurance schemes.

The A.I.M.S. in its conventions has had a similar policy. At every convention there have been speakers representing different points of view. At the last one, for example, Dr. James Miller, a member of the Board of Trustees of the American Medical Association, spoke in the seminar on Medical Care with Dr. Franz Goldmann of Harvard. A.I.M.S. chapters have always made it a principle to hold forum discussions on major problems. A good example is the William Welch chapter of Johns Hopkins where Dr. Bertrand Bernheim, Dr. Harvey Stone of the American Medical Association and Senator Murray spoke on Health Insurance.

This examination, though cursory, indicates the scientific objectivity with which the Association and its Journal have approached this important problem, which indeed is typical of their approach to all others. We, on the other hand, question whether your editorial was conceived in that same spirit. We feel that it is typical of the prejudiced, unscientific attitude which pervades the present "investigation" of the Association of Internes and Medical Students by the American Medical Association. Not once has the organization or any of its officers been called on to answer any of the charges made against it and in fact when a past A.I.M.S. president was in Chicago for that purpose he was not allowed to do so.

William Ruberman, M.D.,
Editor, *The Interne*.

## SEX DETERMINATION

*To the Editor:*—In reply to a request for an explanation of the fact (?) that the sex of the offspring is that of the relatively stronger parent, it was maintained in The Journal (May 28, 1949) that this has nothing to do with the determination of sex. The chromosomal explanation of sex determination was presented and the birth of about 94 females to every 100 males was cited as evidence in support of this explanation. However, approximately as many males as females would also be born if a number of factors besides the chromosomes influenced sex determination and under ordinary or uncontrolled conditions did so on a purely chance basis. As a matter of fact, human sex ratios have been reported which support the view that the sex of the offspring tends to be that of the "superior" parent. Thus, a ratio of 149 males to 100 females (5,676 males and 3,813 females) was reported by Seymour and Koerner (J. A. M. A. **116**:2747-2749 [June 21] 1941) to have resulted from artificial insemination in the United States and a ratio of 125 males to 100 females was found by Bernstein (*Science News Letter*, **55**:339, 1949) among children in 3,890 upper class families in the United States and Germany. It seems that these ratios may be due to relatively "superior" male parentage.

Similarly, in feeding and breeding tests with sheep and rats, evidence has been secured supporting the view that the sex of the offspring tends to be that of the better nourished parent. According to Geddes, P., and Thompson, J. A.: The Evolution of Sex, London, Williams & Norgate, 1904, Girou advanced this sex determination theory in 1828 on the basis of results obtained in breeding tests with a few sheep. Alexander Graham Bell (*J. Hered.* **5**:47, 1914) obtained evidence supporting Girou's theory by feeding and breeding tests on sheep, but further support of the theory was not obtained later when data were simply collected from farmers. Parkes and Drummond

(*Proc. Roy. Soc.*, London, s. B, 98: 147, 1925) found a high female ratio in offspring of female rats that were fed a diet adequate in vitamin B complex and were mated with males fed a diet deficient in vitamin B complex. Later, it became evident that the diets were deficient in vitamin E, but the fact remained that the female parents were the better fed parents and female offspring predominated. We (Hoelzel, Da Costa and Carlson, *Proc. Soc. Exper. Biol. & Med.* 40: 334, 1939) (preliminary report) mated rats fed diets differing in protein, vitamin B complex or vitamin E content and obtained evidence in short term tests that the principle involved in Girou's theory is a factor in sex determination. However, consistent results could not be obtained in long term tests. The study was discontinued after five years in which 1,428 litters of "nutritional hybrids," including 10,959 individuals, were obtained. It then seemed that a far more extended study than we were prepared to make would be needed to determine precisely how nutrition affects the sex ratio, but the chromosomal explanation of sex determination or pure chance did not appear to be sufficient to explain the results.

FREDERICK HOELZEL.
ANTON J. CARLSON, PH.D., M.D.
Department of Physiology, University of Chicago.

## DESOXYCORTICOSTERONE ACETATE NOT A SUBSTITUTE FOR COMPOUND E IN ARTHRITIS

*To the Editor:*—In a recent issue of THE JOURNAL (April 30, p. 1274) the work of the Mayo group dealing with the use of Kendall's compound E in the treatment of rheumatoid arthritis was cited and discussed. Shortly thereafter I learned of an instance in which desoxycorticosterone acetate was being used for the same purpose.

In a check on four leading pharmacists, one reported "many" purchases by physicians for use in cases of rheumatoid arthritis.

From our present knowledge of adrenal physiology, especially the work of Selye, the administration of desoxycorticosterone acetate in rheumatoid arthritis is to be condemned.

I feel that this matter should be stressed to prevent the possible widespread, improper use of desoxycorticosterone acetate.

LEO GITMAN, M.D., Brooklyn.

## ALBERT SCHWEITZER

*To the Editor:*—May I call your attention to some facts that illustrate relations among Albert Schweitzer, American history and current events.

I. The mission station Lambaréné was founded by Dr. Nassau in 1876. The evangelical mission in the Ogowe district began with the activity of American missionaries in 1874. In 1892 the colony Gabun became French. School lessons had to be held in the French language. Therefore the Paris missionary society took over. Robert Hamill Nassau was born in 1835 at Montgomery Square near Norristown, Pa.

He studied at Princeton Theological Seminary. In 1859 he asked the Presbyterian Board of Foreign Missions to send him to the most difficult and dangerous place. He received his medical degree from the University of Pennsylvania (1861). He translated the old testament and part of the new one into Benga, a native Negro language. He published "My Ogowe" and "The First Thirty Years of the West African Mission." He died at Ambler near Philadelphia in 1921. In his retirement, he received a letter from Schweitzer, who informed him that Lambaréné finally had a doctor again.

II. Albert Schweitzer was inspired by the Negro statue on the Marshfield in Colmar (part of the Bruat monument). "The sad expression of his face spoke to me about the sufferings of the native Negro in the dark continent." The sculptor of this statue is Fréderic Bartholdi, who also created the Statue of Liberty.

III. Schweitzer emphasized in his "Philosophy of Civilization" (two volumes) that one of the diseases of our time is the tendency to overorganization and commercial collectivism. He founded the hospital in Lambaréné even without the support of a missionary society. He financed it by his organ concerts and with the help of his friends. The Albert Schweitzer Fellowship (156 Fifth Avenue, New York 10) accepts contributions in this country.

WERNER K. GOTTSTEIN, M.D., Chicago.

# Council on Medical Education and Hospitals

## HAHNEMANN MEDICAL COLLEGE FULLY APPROVED

At its meeting on Friday, June 3, the Council on Medical Education and Hospitals of the American Medical Association voted to remove the Hahnemann Medical College of Philadelphia from probation and to restore the school to a status of full approval. This action was based on a detailed survey of the school carried out by the Secretary of the Council and a representative of the Association of American Medical Colleges, May 9-13, 1949.

This survey revealed that the deficiencies that were observed in 1945 and which led to the school's being placed on probation have been satisfactorily corrected. From the point of view of administration, curriculum, teaching staff, physical plant and clinical facilities, this school is now judged to be fully deserving of approval.

The Executive Council of the Association of American Medical Colleges has voted to recommend to the Association that it take similar action restoring the school to full approval at its meeting, Nov. 8, 1949.

DONALD G. ANDERSON, M.D., *Secretary*.

## PHYSICAL MEDICINE AND REHABILITATION

The Council on Medical Education and Hospitals has recently revised the Essentials for residency training in Physical Medicine and Rehabilitation. Hospitals conducting residencies limited to training in Physical Medicine are advised to expand their programs to meet the requirements of the broader concept of this specialty. A copy of the new Essentials as ratified by the House of Delegates June 6, 1949, follows:

Residencies in this specialty should include experience in the various aspects of rehabilitation and training in the clinical and diagnostic use of all physical agents except those employed in radiology. As used in these essentials, rehabilitative medicine is considered to be that phase of medicine which is concerned with the care, treatment and restoration of the physically and psychiatrically handicapped patient and of the convalescent. A complete program should include physical therapy, corrective speech, psychologic services, social service, occupational therapy, vocational guidance, education and planned recreation, correlated with the necessary medical, surgical and psychiatric care.[1]

A department of physical medicine and rehabilitation should be organized as a major service with a qualified department head and associates, as well as trained technical personnel. It should operate as a service department to the clinical divisions.

Sufficient space in the hospital and adequate equipment should be provided to carry out a comprehensive and well planned program. The allocation to this service of a sufficient number of beds, as well as treatment rooms, offices, class rooms and space for recreation and other activities, is highly advantageous, if not essential.

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[1] Programs presently limited to training in physical medicine should be expanded to meet the requirements of the broader concept of this specialty.

A minimum of three years of residency training is considered necessary to train a physician who desires to specialize in this field. Shorter training periods in this specialty of from six to twelve months may be valuable for residents in medicine, surgery and other specialties.

A three year program should encompass the entire field of physical medicine, including its basic science aspects: medicine, in the rehabilitative aspects of arthritic, cardiovascular and other chronic diseases; ophthalmology-otolaryngology, in the rehabilitation of the blind, deaf and otherwise handicapped patient; psychiatry, as it applies to the care and treatment of the convalescent medical and surgical patient and the psychoneurotic patient; neurology, particularly in its application to special problems such as hemiplegia and other chronic neurologic disorders; orthopedics, as it applies to congenital and acquired deformities; surgery, as it applies to traumatic, amputee and plastic cases; and pediatrics in its relation to the poliomyelitic, rheumatic, cerebral palsied and similar patients. Theoretical and practical training should be given in the use of braces and prosthetic appliances, special technics and equipment for the evaluation, diagnosis and treatment of the physically and mentally handicapped. Psychosocial and prevocational rehabilitation of the convalescent and chronically ill patient should be an integral part of the program. In those cases where the outpatient activity is limited, affiliation with other institutions offering training in special aspects of this field is indicated.

### QUANTITATIVE REQUIREMENTS

To supply an adequate amount and variety of teaching material, there should be a minimum of 500 admissions and 7,500 patient visits to the department annually.

### APPLIED BASIC SCIENCE INSTRUCTION

Training at the graduate level in anatomy, physiology, physics, biophysics and pathology is considered essential. The training in anatomy should include functional anatomy and kinesiology. The training in physics should include radiation physics, electronics and instrumentation. Study in applied basic sciences should be closely correlated with clinical experience.

### BOARD REQUIREMENTS

The American Board of Physical Medicine requires candidates for the certifying examination to have completed an approved rotating internship, following graduation from a medical school approved by the Council on Medical Education and Hospitals, a period of study after the internship of not less than three years of approved supervised training and not less than two additional years of study and/or practice in this specialty.

The Board requires that the special training following the internship include a period of study in clinics, dispensaries or hospitals recognized by the Council on Medical Education and Hospitals and by the American Board of Physical Medicine as competent to provide a satisfactory training in physical medicine and rehabilitation. During this period, the resident should be assigned directly to the department of physical medicine and rehabilitation for a minimum of one and one half years. The period of specialized preparation should include (*a*) graduate training in anatomy, including kinesiology and functional anatomy; physics, including radiation physics, electronics and medical instrumentation; physiology; pathology, and other basic sciences which are necessary to the proper understanding of the specialty; (*b*) an active experience of not less than two years in hospitals, clinics or dispensaries approved by the Council and the American Board of Physical Medicine. An additional period of not less than two years of study and/or practice in the specialty is considered necessary to complete the applicant's training. The candidate is required to pass a written and oral examination given by the Board, which will include questions concerning the basic sciences, clinical practice and laboratory and public health problems related to physical medicine and rehabilitation.

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various Centers. Sept. 12-14. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc. *Written.* Various Centers. July 15. *Oral.* Oct. 16-20. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

American Board of Internal Medicine: *Written.* Oct. 17. Asst. Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

American Board of Obstetrics and Gynecology, Inc. *Part I.* Various Centers. Feb. 3. Final date for filing application is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: St. Louis, Oct. 15-19; Boston, December. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Final date for filing application for Part II is Aug. 15. Address: Sec.-Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

American Board of Pathology: Chicago, Oct. 7-8. Final date for filing application is Sept. 1. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: *Oral.* Cleveland, Sept. 16-18; New York City, Oct. 21-23; Chicago, Dec. 9-11. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Preventive Medicine and Public Health: *Parts I and II.* New York, Oct. 22-24. Final date for filing application is July 22. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Psychiatry and Neurology, Inc. *Special Examination,* Chicago, Oct. 24-25. Final date for filing application is July 15. December, New York City. Sec. Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, October 26. Final date for filing applications is July 1. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written.* December. *Oral and Clinical.* Chicago, Feb. 11-15. Final date for receipt of case histories is Sept. 1, 1949. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18.

### BOARDS OF MEDICAL EXAMINERS

Alaska:* Juneau, Sept. 6. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Connecticut:* *Examination.* Hartford, July 12-13. Secretary to the Board, Dr. Creighton Barker, 258 Church Street, New Haven.

Delaware: Dover, July 12-14. Sec., Dr. J. S. McDaniel, 229 South State St., Dover.

District of Columbia:* *Examination.* Washington, Nov. 14-15. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Hawaii:* *Examination.* Honolulu, July 11-14. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu.

Idaho: Boise, July 11-13. Sec., Miss Estella S. Mulliner, Bureau of Occupational Licenses, 355 State House, Boise.

Massachusetts: *Written.* Boston, July 12-15. Sec., Dr. George L. Schadt, 413 E. State House, Boston.

Montana: Helena, Oct. 3-5. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, Sept. 8-9. Sec., Dr. J. S. Wheeler, 107 State House, Concord.

New Mexico:* Santa Fe, Oct. 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

Pennsylvania: *Examination.* Philadelphia and Pittsburgh, July. Acting Sec., Mrs. B. G. Steiner, 351 Education Bldg., Harrisburg.

Puerto Rico: San Juan, Sept. 6-10. Sec., Dr. Luis Cueto Coll, Box 3717, Santurce.

South Dakota:* *Examination.* Pierre, July 19. Sec., Dr. G. J. Van Heuvelen, Capitol Bldg., Pierre.

Utah: *Examination.* Salt Lake City, July 13-15. Sec., Dept. of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

WASHINGTON:* Seattle, July 18-20. Sec., Mr. Edward C. Dohm, Department of Licenses, Olympia.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: Juneau, Aug. 28. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

ARKANSAS: *Examination.* Little Rock, Oct. 4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

DISTRICT OF COLUMBIA: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

FLORIDA: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

IOWA: Des Moines, July 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Detroit and Ann Arbor, Oct. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing 15.

NEBRASKA: Omaha, Oct. 4-5. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln 9.

OREGON: Portland, Sept. 3 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

RHODE ISLAND: *Examination.* Providence, Aug. 10. Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

WASHINGTON: Seattle, July 13-14. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

WISCONSIN: Milwaukee, Sept. 24 and Dec 3. Sec., Prof. W. H. Barber, Ripon College, Ripon.

# Bureau of Legal Medicine and Legislation

## MEDICOLEGAL ABSTRACTS

**Physical Examinations: Defendant Physician's Right to Examination of Plaintiff in Malpractice Action.**—The plaintiff filed suit for damages caused by the alleged malpractice of the defendant physician during the course of a physical examination. A trial held before a jury resulted in a verdict in favor of the plaintiff, on which judgment was entered, so the defendant physician appealed to the appellate court of Indiana.

The plaintiff alleged, in substance, that she consulted the defendant, a duly licensed and practicing physician and surgeon, for the purpose of having him diagnose the cause of a rash or skin eruption on her neck and chest; that in the course of this examination he ruptured her hymen by means of a bivalve speculum; that the defendant was negligent, careless and failed to exercise the degree of care and skill required in the making of such examination and in the rupture of the hymen. Prior to trial the defendant filed a petition asking the court to require the plaintiff to submit to a physical examination. In this petition the defendant alleged that the plaintiff could be examined, without harm or pain to herself, by a physician who is a specialist, that since the very character of the plaintiff's cause of action involves intimate information concerning the plaintiff's person she cannot be embarrassed by a physical examination and the same would not constitute an invasion of the privacy of the plaintiff's person; that a refusal by the court to have a professional disinterested physician witness examine the plaintiff as to the contentions in her complaint and discover the present conditions, concerning which the plaintiff has made allegations and concerning which she will testify, will so prevent the defendant from obtaining information concerning the very subject matter of this action as to constitute an abuse of the right of the defendant to have investigated the facts concerning which only the plaintiff can otherwise have knowledge and will prevent the defendant from interposing a full defense in this action. The court overruled this petition and, on appeal, the defendant contended that the trial court erred in so doing for the reason that the alleged injury and the nature and extent thereof could be discerned only by objective findings of expert medical examiners, and that such examination could have been made without danger, pain, harm, injury or embarrassment to the plaintiff. The plaintiff, on the other hand, contended that the question of whether such a motion should be granted was discretionary with the trial court and that in this case there was no abuse of such discretion.

The leading case on the question, said the appellate court, is *City of South Bend et al v. Turner, 156 Indiana, 418.* In that case the trial court denied the motion of the appellant for a physical examination of appellee to determine the true character and extent of his injuries and their probable effect as to permanancy on his mind and person. In reversing the trial judgment, the Supreme Court of Indiana reviewed the decisions of many jurisdictions, concluded that the great majority uphold the right of courts to require an examination in proper circumstances and set forth the following propositions which the cases establish: (1) That trial courts have the power to order the medical examination by experts of the injured parts of a plaintiff who is seeking to recover damages therefor; (2) that a defendant has no absolute right to demand the enforcement of such order, but the motion therefor is addressed to the sound discretion of the trial court; (3) that the exercise of such discretion is reviewable on appeal, and correctible in cases of abuse; (4) that the examination should be applied for and made before entering on the trial, and should be ordered and conducted under the direction of the court, whenever it fairly appears that the ends of justice require a more certain ascertainment of important facts which can only be disclosed or fully elucidated by such an examination, and such an examination may be made without danger to the plaintiff's life or health or the infliction of serious pain; (5) that the refusal of the motion when the circumstances appearing in the record present a reasonably clear case for the examination, under the rules stated, is such an abuse of discretion in the trial court as will operate to reverse a judgment for the plaintiff; (6) that such order may be enforced, not by punishment as for a contempt, but by delaying or dismissing the proceeding. "When it becomes a question of probable violence to the refined and delicate feelings of the plaintiff, on the one hand, and probable injustice to the defendant, on the other, the law will not hesitate . . ." concluded the court in the South Bend case.

While the injuries are of a different nature in the instant case, said the appellate court, we believe that the principles which guided that decision apply with equal and perhaps greater force here. The defendant's motion was seasonably made, and it was incumbent on the plaintiff to produce evidence as to the nature and extent of the rupture and whether or not it caused in whole or in part a destruction of her hymen. These facts could be established only through a physical examination by competent physicians. Such an examination could be made without danger to her life or health and without infliction of serious pain. Certainly, continued the court, it cannot be seriously maintained that such an examination would be an invasion of her privacy or would cause her such embarrassment as to justify the denial of the motion, because in order to maintain her case she would be required to testify as to the details of the examination out of which this action arose. The denial of the motion for a physical examination of the plaintiff deprived the defendant and the court of the best method of determining the nature and extent of the plaintiff's alleged injuries. This was a reversible error, concluded the court.

The judgment of the trial court in favor of the plaintiff was accordingly reversed and an order entered granting the defendant's motion for a physical examination.—*Templin v. Erkekedis, 84 N. E. (2d) 728 (Ind., 1949).*

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. *Requests should be accompanied by stamps* to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American Heart Journal, St. Louis

**37**:1-160 (Jan.) 1949

Ventricular Gradient in Doubtful Electrocardiograms. M. Dolgin and L. N. Katz.—p. 1.
Intracardiac Blood Pressure in Human Subjects and Its Relation to Respiratory Phases. A. Battro, H. Bidoggia, E. R. Pietrafesa and F. E. Labourt.—p. 11.
*Transient Ventricular Fibrillation: I. Prefibrillary Period During Established Auriculoventricular Dissociation with Note on Phonocardiograms Obtained at Such Times.* S. P. Schwartz, J. Orloff and C. Fox.—p. 21.
Observations on Action of Ergonovine on Coronary Circulation and Its Use in Diagnosis of Coronary Artery Insufficiency. I. Stein.—p. 36.
*Studies in Intracardiac Electrography in Man. I. Potential Variations in Right Atrium.* H. D. Levine, H. K. Hellems, M. H. Wittenborg and L. Dexter.—p. 46.
Id. II: Potential Variations in Right Ventricle. H. D. Levine, H. K. Hellems, L. Dexter and A. S. Tucker.—p. 64.
*Effect of Atabrine (Quinacrine Hydrochloride) on Cardiac Arrhythmias. M. M. Gertler and S. B. Yohalem.—p. 79.
Different Types of Intraventricular Block. M. Segers.—p. 92.
*Transmission of Murmurs.* W. J. Kerr and V. C. Harp Jr.—p. 100.
Localized Vascular Dilatations of Human Skin: Capillary Microscopy and Related Studies. W. Redisch and R. H. Pelzer.—p. 106.

**37**:161-320 (Feb.) 1949

Ventricular Complex in Left Ventricular Hypertrophy as Obtained by Unipolar Precordial and Limb Leads. M. Sokolow and T. P. Lyon. —p. 161.
Variable Loudness of First Heart Sound in Auricular Fibrillation. D. A. Rytand.—p. 187.
Correlation of Electrocardiographic and Pathologic Findings in Anteroposterior Infarction. G. B. Myers, H. A. Klein and T. Hiratzka. —p. 205.
Hypertension and Tachycardia Due to Concussion of Brain. W. Raab. —p. 237.
*Modification of Electrocardiogram of Myocardial Infarction by Anomalous* Atrioventricular Excitation (Wolff-Parkinson-White Syndrome): Report of Case. A. D. Kistin and G. P. Robb.—p. 249.
Demonstration of Coronary Arteries with Nylon. A. Wagner and C. A. Poindexter.—p. 258.
*Electrocardiogram in Ventricular Aneurysm.* B. Rosenberg and W. J. Messinger.—p. 267.

**Quinacrine Hydrochloride in Cardiac Arrhythmias.**—Gertler and Yohalem report observations on 32 patients who were hospitalized with cardiac arrhythmias and treated with quinacrine hydrochloride. The dosage varied from 0.3 to 0.6 Gm., intramuscularly, in the first 9 cases; in all but 2 of the remaining cases 0.4 Gm. was given intramuscularly. All injections were administered in the gluteal region, the quinacrine hydrochloride being dissolved in 10 cc. of 1 per cent procaine hydrochloride solution. The quinacrine hydrochloride was used in twenty-seven trials in 26 patients with auricular fibrillation. In 13 of these the results were satisfactory. Among the 14 patients in whom treatment with quinacrine hydrochloride was unsuccessful, there were 5 with thyrotoxic heart disease and 1 with fatal pheochromocytoma with rheumatic heart disease. Quinidine, administered before quinacrine hydrochloride was used, was ineffective in sixteen trials. In patients in whom quinacrine hydrochloride failed to restore a normal rhythm digitalis and/or quinidine was of no avail in all but one instance. Six patients with cardiac arrhythmias other than auricular fibrillation were treated with quinacrine hydrochloride; included were 2 cases each of nodal tachycardia, auricular flutter and ventricular tachycardia. Quinacrine hydrochloride was successful in 3 of these 6 cases; 2 of the unsuccessfully treated patients died shortly after treatment, and revealed coronary occlusion. The best results of quinacrine hydrochloride occurred in older patients with arteriosclerotic cardiovascular disease and in younger patients in whom the arrhythmia was of less than forty-eight hours' duration. The time at which the arrhythmias disappeared after therapy with quinacrine hydrochloride approximated the time at which the maximal blood levels were reached after intramuscular injections.

### American J. Digestive Diseases, Fort Wayne, Ind.

**16**:35-78 (Feb.) 1949

*Experimental Production and Treatment of Peptic Ulcers: Review of Literature.* M. Berg.—p. 35.
Trends in Diagnosis, Etiology and Treatment of Duodenal Ulcer. F. G. Connell.—p. 55.
*Soil, Food and Health. N. P. Norman.—p. 63.

**Soil, Food and Health.**—Norman stresses that fertile soils, healthy plants and healthy animals constitute our most potent apparatus for the maintenance of health and the prevention of most diseases. He deplores that even now, despite the numerous positive findings of nutritional research, the rank and file of physicians and dentists ignore the enormous therapeutic potential which is inherent in foods of good biologic value. The author feels that the modern food processing industry is responsible for much malnutrition. Physicians should interest themselves in the soil; its fertility, its replenishment and conservation. They should educate the people to insist on buying natural foods rich in nutritive essentials and to refuse to buy highly processed food commodities. Food of good biologic value is the best therapeutic agent we possess.

### American Journal of Medicine, New York

**6**:139-274 (Feb.) 1949

*Multiple Myeloma: Its Clinical and Laboratory Diagnosis with Emphasis on Electrophoretic Abnormalities. W. S. Adams, E. L. Alling and J. S. Lawrence.—p. 141.
*Test for Presence of "Hypertensive Diencephalic Syndrome" Using Histamine. H. A. Schroeder and M. L. Goldman.—p. 162.
*Treatment of Thromboangiitis Obliterans: Two-Year Follow-Up After* Sympathectomy. W. J. Messinger, E. N. Goodman and J. C. White. —p. 168.
Consideration of Glomerular Nephritis in Its Relation to Sulfonamide Sensitivity. R. H. Rigdon, W. H. Siddon and D. E. Fletcher.—p. 177.
*Chemotherapy of Malignant Disease.* A. Gellhorn and L. O. Jones. —p. 188.
Role of Cardiac Output in Mechanisms of Congestive Heart Failure. E. A. Stead Jr.—p. 232.

**Multiple Myeloma.**—Adams and his co-workers report 61 cases of multiple myeloma in 44 men and 17 women between the ages of 31 and 76, the average in this group being 58 years. Sixty patients showed a pronounced carious condition or a complete absence of teeth, suggesting that the same process which so commonly leads to skeletal osteoporosis also affects the teeth. Forty-one patients had bone pain and as many patients had loss of weight. Thirty-seven patients had gastrointestinal symptoms and 31 had low grade, remittent fever. Pallor was present in 28 patients. Bleeding occurred in 24 patients. Disorders of the nervous system were observed in 21 patients, root cord compression being the commonest neurologic manifestation. Bone tumors were present in 13 patients. The incidence of Bence Jones proteinuria was 28. Elevated total plasma protein occurred in 31 cases. Hyperglobulinemia was present in 41 cases. Because of a lowered albumin level hyperglobulinemia may be present without hyperproteinemia. Electrophoretic studies were made in 29 cases; in 15 of them the electrophoretic patterns were similar to those previously reported. In 6 cases there was a tall, narrow, abnormal peak migrating more slowly than gamma globulin, a type of pattern which has not been previously reported. In 8 cases large abnormal peaks were absent, but there were significant small abnormalities; in these 8 cases the incidence of Bence Jones proteinuria was 87.5 per cent, suggesting that in many cases in which large abnormal peaks are absent, small abnormalities are due to Bence Jones protein in the plasma. The high incidence of Bence Jones proteinuria in this group may result from the absence in the plasma of a high molecular weight protein capable of forming complexes with Bence Jones protein. The accuracy and promptness of the diagnosis of multiple myeloma may be increased by careful electrophoretic studies and by greater attention to the occurrence of rouleaux formation of the red blood cells in the peripheral blood (observed in 36 of the authors' cases) and to the bright blue coloration of the Wright's stained blood smear. Any case of unexplained anemia should be given the benefit of a sternal aspiration and/or sternal biopsy. Energetic search should be made for Bence Jones protein. Serum calcium level, inorganic phosphorus, alkaline and acid phosphatase should be determined. Careful analysis of all roentgenographic osteolytic processes should be made, and more attention should be paid to the occurrence of osteoporosis.

**Histamine Test.**—Schroeder and Goldman performed a test using the intradermal injection of 0.25 mg. of histamine on 103 ward and clinic patients, 53 of whom had arterial hypertension and 50 did not. Of the hypertensive patients 16 were men and 37 were women; there were 25 normotensive men and 25 women. Criteria such as flushing of the face and circumoral pallor, headache, lacrimation, blotchy erythema on the face, back, neckline, chest and abdomen and local reaction at the site of injection were graded 1 plus to 4 plus. Sixteen hypertensive patients showed a reaction to histamine considered as 3 or 4 plus. All were considered to exhibit clinical signs of "neurogenic" hypertension in that blood pressures were labile, vascular disease was minimal, the course was usually benign and there were associated emotional disturbances. Sixteen more patients of a similar type gave a reaction considered as 2 plus, a definite although less marked response. Only 7 of this type did not react or reacted only slightly. Of the normal controls 40 patients did not react in this manner to histamine, 5 reacted slightly and only 5 showed responses considered 2 to 4 plus; 2 of these suffered from psychoneurosis, 1 from Hodgkin's disease and 1 from mild rheumatoid arthritis. Tests were repeated weeks or months apart in 6 patients who reacted, and similar results were obtained. Attacks simulating presenting symptoms were initiated by histamine in most of those patients in whom the reaction was positive. In addition to the blush and headache, symptoms included severe spells of weeping, dizziness, palpitation, excitement and anxiety, and tachycardia. Histamine-like substances may be concerned in the causation of some of the symptoms typical of the "hypertensive diencephalic syndrome" which are common to many hypertensive patients, especially those exhibiting the "neurogenic" type.

## American J. Obstetrics and Gynecology, St. Louis

### 57:211-420 (Feb.) 1949. Partial Index

Surgical Anatomy of Extraperitoneal Cesarean Section. G. A. Bourgeois and L. E. Phaneuf.—p. 237.
Chemical Nature of Menstrual Toxin. D. I. Macht.—p. 251.
*Malignant Tumors of Uterine Fundus Subsequent to Irradiation for Benign Pelvic Conditions. H. Speert and T. C. Peightal.—p. 261.
*Pregnancy and Hodgkin's Disease with Report of 3 Cases. S. C. Kasdon.—p. 282.
Morphine Suppression of Urinary Output in Pregnant and Nonpregnant Women. O. F. Kraushaar, J. T. Bradbury, Y. K. Wang and W. E. Brown.—p. 302.
Relation of Rh Incompatibility to Abortion. B. Blass.—p. 323.
Internal Podalic Version and Extraction. H. W. Erving.—p. 333.
Third Stage of Labor: Plea for Manual Removal of Placenta. R. A. Cacciarelli.—p. 351.
Specific Estrogenic and Androgenic Smears in Relation to Fetal Sex During Pregnancy. H. E. Nieburgs and R. B. Greenblatt.—p. 356.
Factors Influencing Successful Posterior Pituitary Treatment of Functional Uterine Dystocia with Particular Consideration of Its Intravenous Administration. L. M. Hellman.—p. 364.
Significance of Abnormal Menopausal Vaginal Smears. H. B. Davidson, E. L. Hecht and R. L. Winston.—p. 370.
Noninvasive Cervical Carcinoma: Clinical Features. A. W. Diddle, C. T. Ashworth, W. W. Brown Jr. and M. T. Bronstad Jr.—p. 376.
Infectious Mononucleosis Complicating Pregnanacy with Fatal Congenital Anomaly of Infant. Deborah C. Leary, L. G. Welt and R. S. Beckett.—p. 381.
Precocious Puberty in Girls. R. H. Hoge.—p. 388.
Metastatic Carcinoma of Ureter in Carcinoma of Cervix. L. S. Drexler.—p. 391.
Vaginal Carcinoma in Girl 14 Years of Age Treated by Radiation. R. S. Siddall.—p. 396.

**Malignant Tumors of Uterine Fundus Subsequent to Irradiation.**—Speert and Peightal point out that exposure of the female genital organs to radiant energy in the form of roentgen rays or radium emanations may not be as innocuous as it has long been believed to be. At least 21 of the 270 patients (8 per cent) who have been treated for malignant tumors of the uterine fundus on the gynecologic service of the Roosevelt Hospital have had previous pelvic irradiation for benign conditions. The incidence of previous pelvic irradiation among patients with cervical carcinoma, by contrast, was only 0.3 per cent. The important clinical question is whether pelvic irradiation influences the subsequent development of neoplastic disease of the uterine fundus. Six of the 21 tumors contained sarcomatous elements. This was five times the incidence of sarcomas among all the malignant tumors of the uterine fundus. The average time interval between irradiation and detection of the uterine cancers was 8.3 years. These findings, together with previously published data in the literature, suggest a possible carcinogenic effect of radiant energy on the human uterine fundus.

**Pregnancy and Hodgkin's Disease.**—Kasdon says that 3 patients with Hodgkin's lymphogranulomatosis, who were pregnant, were treated in the tumor clinic of the Boston Dispensary in the past ten years. A total of 12 women with Hodgkin's disease were admitted during this period. Each diagnosis was confirmed by histologic study. An analysis of earlier reports together with these 3 cases is considered to be of some value in developing a basis for the management of the obstetric factors in this complex situation. The author arrives at the conclusion that Hodgkin's disease complicating pregnancy does not grossly affect ovulation, fertility, incidence of spontaneous abortion or of hemorrhage before, during or after parturition. Gestation, parturition and the puerperium are not affected by coincidental Hodgkin's disease, but the disease is transmitted from the mother to the fetus across the placenta in 9 per cent of the reported cases. There is no report in the literature of injury to the shielded fetus from roentgen radiation used in the treatment of Hodgkin's disease. Interruption of pregnancy during the course of Hodgkin's disease is not indicated from the evidence at hand.

## American Journal of Public Health, New York

### 39:135-292 (Feb.) 1949. Partial Index

Lemuel Shattuck—Still a Prophet; Lemuel Shattuck—America's Great Public Health Pioneer. W. G. Smillie.—p. 135.
Sanitation of Yesterday—But What of Tomorrow? A. Wolman.—p. 145.
Vitality of Vital Statistics. H. Meunch.—p. 151.
*The Montefiore Hospital Home Care Program. M. Cherkasky.—p. 163.
Home Nursing Service in Health Insurance Plan of Greater New York. M. G. Randall.—p. 167.
*Studies on Survival of Influenza Virus Between Epidemics and Antigenic Variants of Virus. R. M. Taylor.—p. 171.
Comparison of Pertussis Cultures by Mouse Protection and Virulence Tests. P. L. Kendrick, Elaine L. Updyke and Grace Eldering.—p. 179.
Diphtheria Epidemic in Amsterdam. A. Charlotte Ruys and A. L. Noordam.—p. 185.
Observations on Epidemiology of Shigellosis Among Institutional Inmates in Puerto Rico. G. Arbona and L. González.—p. 195.
Arctic Sanitation. W. A. Hardenbergh.—p. 202.

**Home Care Program.**—Cherkasky states that hospitals, despite their stress on scientific medicine, diagnostic apparatus, laboratory examination and therapeutic procedures, have held back from an understanding of sick human beings as social human beings. Montefiore Hospital, in extending its services into the home, has begun to learn many things about the patient which can only be learned when he is in the bosom of his family. To the doctors on the program it has brought a new realization of the importance of social factors in disease. Certain questions must be answered before it can be decided that it is best for a patient to return to his home. Some families seem not to want the patient back, but closer investigation reveals that the reason is not lack of love, but fear—fear of illness, fear of impending disaster, fear of inability to do what is required. If the fundamental attitudes are sound, all these fears can be overcome. When it has been decided that a patient is medically and socially eligible, the patient goes on home care and receives medical services including specialists. Social service, visiting nurses' service and housekeeping services are provided, as are transportation, medication and occupational and physical therapy. Home care for patients who are suitable is not only "as good as" hospital care—it is infinitely better. The author cites a case to illustrate the advantages of the home care program.

**Survival of Influenza Virus Between Epidemics.**—Taylor says that a search for influenza virus in an institutional population during the fall, winter and spring months revealed the presence of virus in the throats of symptomless persons thirty-two days before a clinically manifest epidemic and during the epidemic but not on other occasions. All save one strain isolated from influenza suspects in 1947 and 1948, as well as the strains isolated from the throats of symptomless persons shortly before and during the epidemic of 1947, are antigenically similar. While they may be regarded as belonging to type A influenza virus, they differ markedly from PR8 and an A type virus isolated in 1943. There was no significant difference in the influenza attack rate among persons vaccinated with a commercial A and B type influenza vaccine four months before an institutional epidemic in 1947 and among those who were not vaccinated.

## Annals of Otol., Rhin. and Laryngology, St. Louis

### **57**:925-1191 (Dec.) 1948. Partial Index

"Reverse King Operation." Surgical Procedure for Restoration of Phonation in Cases of Aphonia Due to Unilateral Vocal Cord Paralysis. L. F. Morrison.—p. 945.
Clinical and Pathologic Study of Tonsil Tags. J. O. Gooch and H. I. Lillie.—p. 957.
Tuberculosis of Middle Ear and Temporal Bone. J. G. Adams.—p. 980.
Treatment of Certain Types of Deafness by Roentgen Ray Therapy. N. A. Youngs and P. H. Woutat.—p. 984.
Low Incidence of Mastoiditis in Series of Cases Treated Without Sulfonamides. H. Butler.—p. 992.
Streptomycin Toxicity to Labyrinth. O. P. Moffitt Jr. and W. B. Norman.—p. 999.
Observations on Surgical Anatomy in Fenestration Operation. S. Rosen. —p. 1007.
Present Status of Objective Hearing Tests. H. G. Kobrak.—p. 1018.
*Bleeding Following Tonsillectomy and Adenoidectomy. S. L. Fox and G. B. West Jr.—p. 1032.
Foreign Bodies in Air and Food Passages: Series of 250 Cases. C. M. Norris.—p. 1049.
Modification of Fenestration Operation Technic. W. E. Loch.—p. 1072.

**Bleeding Following Tonsillectomy.**—Fox and West differentiate between primary and secondary hemorrhage. Primary bleeding occurs during the first twenty-four to forty-eight hours postoperatively, while secondary bleeding occurs thereafter and up to ten days postoperatively. Primary bleeding is due to inadequate surgical hemostasis at the time of operation, or occasionally to the loss of a ligature from the throat during the reaction period. Predisposing factors and causes for secondary hemorrhage include acute febrile diseases occurring during convalescence; dietary deficiences, particularly of vitamins and proteins; hypertension; local infection; local trauma; blood dyscrasias, and certain drugs. The authors review a series of 687 cases of tonsillectomy and adenoidectomy to show the effects of acetylsalicylic acid chewing gum and vitamin K on secondary tonsillar bleeding. It is felt that the local use of acetylsalicylic acid is a major factor in late tonsillar bleeding and should therefore be avoided.

## Archives of Neurology and Psychiatry, Chicago

### **60**:221-330 (Sept.) 1948

Changes in Brain Structure and Memory After Intermittent Exposure to Simulated Altitude of 30,000 Feet. A. V. Jensen, R. F. Becker and W. F. Windle.—p. 221.
Dynamic Anatomy of Cerebral Circulation. H. A. Shenkin, M. H. Harmel and S. S. Kety.—p. 240.
*Studies on Headache: Analysis of Vascular Mechanisms in Headache by Use of Human Centrifuge, with Observations on Pain Perception Under Increased Positive G. E. C. Kunkle, D. W. Lund and J. J. Maher.—p. 253.
BAL Therapy of Severe Peripheral Neuropathies. A. R. Furmanski. —p. 270.
Studies on Sweat Secretion in Man: I. Innervation of Sweat Glands of Upper Extremity: Newer Methods of Studying Sweating. M. G. Netsky.—p. 279.
Peripheral Neuropathy in Neural Leprosy: Report of Case. J. Pessin and C. F. Kittle.—p. 288.
Unrelated Neurologic Syndromes in Patients with Syphilis. E. R. Maillard.—p. 297.

**Use of Human Centrifuge in Studies on Headaches.**—The observations presented by Kunkle and his associates concern the effects of centrifugal forces on certain experimentally induced and clinical headaches. They found that the exposure to a positive acceleration of 3.0 or 4.0 g (centrifugal forces in the head to seat direction) on the human centrifuge had little or no effect on the pain threshold to the stimulus of radiant heat or on the intensity of pain induced by a variety of stimuli. Experimentally induced headaches of nonvascular origin arising from compression or irritation of the surface tissues of the head were only slightly reduced in intensity during exposure to a positive acceleration of 3.0 g; the minor changes in such headaches were attributable to distraction. Experimentally induced headaches of moderate severity arising from distention of cranial arteries (histamine and caffeine withdrawal headaches) were eliminated during exposure to positive accelerations of 2.0 or 3.0 g, a relief attributable to a concurrent fall in intravascular pressure at the head level. Clinical headaches of vascular origin responded similarly, for in subjects experiencing headache related to hunger, recent head trauma or emotional tension, all with clinical features suggesting that the pain arose from distention of intracranial or extracranial arteries, the headache was completely eliminated during exposure to a positive acceleration of 2.0 g. A brief headache was sometimes noted in the normal subject during release from increased positive g; such headache probably arises from transient distention of cranial arteries, and in this respect is the analogue of headache induced by negative g. The human centrifuge is a useful tool in the analysis of vascular mechanisms in headache.

## Archives of Otolaryngology, Chicago

### **48**:1-144 (July) 1948

Herpes Zoster Oticus ("Ramsay Hunt Syndrome"): Report of Case. L. Johnson and B. Zonderman.—p. 1.
Cleft Lip and Palate: Some Technical Procedures Used in Its Treatment, with Especial Reference to Closure of Complete Cleft of Anterior Half of Palate. F. Z. Havens.—p. 9.
Middle Ear in Sound Conduction. E. G. Wever, M. Lawrence and K. R. Smith.—p. 19.
Thrombophlebitis of Cavernous Sinus Originating from Acute Dental Infection. K. S. Oliver, A. F. Diab and C. N. Abu-Jaudeh.—p. 36.
Cigaret Smoke Irritation: III. Efficiency of Filters in Reducing Its Intensity. H. B. Haag, J. K. Finnegan and P. S. Larson.—p. 41.
Incidence of Congestion of Larynx in Men and Women. G. H. Cox. —p. 47.
Auditory Nerve in Multiple Sclerosis. H. Von Leden and B. T. Horton.—p. 51.
Bartolommeo Eustachio: Great Medical Genius Whose Chief Masterpiece Remained Hidden for One Hundred and Fifty Years. W. A. Wells. —p. 58.
*p*H of Nasal Secretion in Situ in Infants and in Children: Effect of Hyperventilation and Crying. N. D. Fabricant and M. A. Perlstein. —p. 67.
Rhinoplasty in Children with Report of Operation on Nine Year Old Boy. I. M. Lefkon.—p. 73.
Contributions to Plastic Surgery During 1946. L. A. Peer and J. Van Duyn.—p. 86.

### **48**:145-262 (Aug.) 1948

Bacterial Allergy in Relation to Asthma. T. P. O'Connor.—p. 145.
Speech Therapy: Experiences with Patients Who Had Undergone Total Laryngectomy. E. D. Freud.—p. 150.
Tracheotomy in Poliomyelitis Simplified with New Respirator. R. L. Peterson and R. C. Ward.—p. 156.
*Effect of Pregnancy on Otosclerosis. H. W. Smith.—p. 159.
Vocal Analysis. P. J. Moses.—p. 171.
Invasion of Ethmoid Sinuses by Adenoma of Pituitary Gland: Report of Case. D. F. Proctor.—p. 187.
Role of Septum in Rhinoplasty. J. W. Maliniac.—p. 189.
Ophthalmic Conditions Referable to Diseases of Paranasal Sinuses. H. M. Goodyear.—p. 202.
*Tuberculosis of Ear, Nose and Throat Treated with Streptomycin: Report of Twelve Cases. J. L. Greif and J. W. Gould.—p. 209.
Lymphoid Eustachian Salpingitis: Its Effect on Tubal Patency: Selective Criteria for Nasopharyngeal Irradiation. J. B. Farrior.—p. 221.
Unusual Pulmonary Complications Resulting from Prolonged Lodging of Nonopaque Foreign Body in Left Main Stem Bronchus. A. Q. Penta.—p. 233.
Induction of Anesthesia with Thiopental Sodium in Tonsillectomy. J. K. M. Dickie.—p. 238.
Solitary Myeloma Mistaken for Frontal Sinusitis. W. D. Chase.—p. 244.

**Effect of Pregnancy on Otosclerosis.**—Smith cites reports from the literature that indicate that pregnancy may cause an increase in hearing loss in patients with otosclerosis. The incidence of this pregnancy-connected hearing loss in women with otosclerosis varies from 20 to over 70 per cent in the reports cited. The author made a study of 73 cases observed at the New York Eye and Ear Infirmary. His survey was restricted to cases in which after full examination the patient had been judged a suitable candidate for the operation. He found that the onset of hearing loss was initiated by pregnancy in 22.9 per cent of the 73 patients studied, and it was further increased by pregnancy in an additional 14.7 per cent. The evidence in the literature reviewed and the results of the study presented agree that eugenic measures are ineffective in the prophylaxis of otosclerosis. Hearing aids and fenestration of the labyrinth may offer relief to patients afflicted with otosclerosis. Abortion and sterilization are not indicated in the average case of otosclerosis complicated with pregnancy.

**Streptomycin in Tuberculosis of Ear, Nose and Throat.**—Greif and Gould report 12 cases of tuberculosis of the ear, the nose or the throat treated with streptomycin at Fitzsimons General Hospital, Denver. Apparent healing was obtained in 4 of 6 patients with tuberculosis of the larynx, in 1 patient with tuberculosis of pharynx and larynx; in 2 of 3 patients with tuberculosis of the middle ear and in 1 patient with tuberculosis of the mastoid process. Improvement was observed in 2 patients with tuberculosis of the larynx and in 1 patient with tuberculosis of the nasal septum. There was no improvement in 1 patient with tuberculosis of the middle ear.

## Archives of Surgery, Chicago

### **57:**763-946 (Dec.) 1948

Carcinoma of Pancreas. H. K. Gray.—p. 763.
Acute Obstruction of Colon, with Special Reference to Factors of Mortality. M. L. Michel and E. L. McCafferty.—p. 774.
Surgical Anatomy of Anal Canal. J. E. Dunphy.—p. 791.
Orthopedic Surgery in Army Air Forces During World War II: II. Recurrent Dislocation of the Shoulder and Ununited Fractures of Carpal Scaphoid. J. V. Luck, H. M. A. Smith, H. B. Lacey and A. R. Shands Jr.—p. 801.
Chemosurgical Treatment of Cancer of Extremities and Trunk: Microscopically Controlled Method of Excision. F. E. Mohs.—p. 818.
*Thyroidectomy and Parathyroids. G. A. Johnstone and Florence Voth-Ostendorph.—p. 833.
Subphrenic Abscess. P. C. Shea Jr. and W. D. Holden.—p. 843.
Carcinoma of Lung with Intracranial Metastasis. H. T. Ballantine Jr. and F. X. Byron.—p. 849.
Fracture Deformities: Hip Fractures. L. T. Peterson.—p. 855.
Histochemical Considerations Relative to Bone Growth and Repair. C. G. Barber.—p. 862.
Tumors of Bone and of Synovial Membrane. H. W. Meyerding and F. L. Flashman.—p. 871.
Review of Urologic Surgery. A. J. Scholl and others.—p. 897.

**Thyroidectomy and the Parathyroids.**—*Johnstone* and *Voth-Ostendorph* direct attention to the fact that although the dire consequences of injury to the parathyroids or of removal of the glands are generally appreciated, thyroidectomies are done often without the operator's being able to recognize this tissue. As a test to determine the difficulty in recognition of parathyroid tissue, 248 specimens were obtained of what was judged to be parathyroid tissue from 100 postmortem examinations and submitted for microscopic examination by the pathologist. One hundred and ninety-one specimens proved to be parathyroid tissue, 32 were lymph nodes and 25 were thyroid gland. The incidence of recognition was 77 per cent. The most common location of a parathyroid gland was found to be at the crossroads of the inferior thyroid artery and the recurrent laryngeal nerve. The next most common place was near the lower pole of the thyroid gland. In 100 reports on operations on the thyroid, 7 described visualization of parathyroid glands, one stated that no parathyroid glands were seen and 92 made no statement in regard to the presence or absence of the parathyroids. The authors feel that the recognition of the parathyroids during thyroidectomy is essential and that the best way of acquiring skill in recognizing them is by dissection at necropsy.

## California Medicine, San Francisco

### **70:**1-66 (Jan.) 1949

Physiologic Basis of Symptoms in Eclampsia. E. W. Page.—p. 1.
Problem of Lupus Erythematosus. H. E. Michelson.—p. 5.
*Rapid Healing of Peptic Ulcers in Patients Receiving Fresh Cabbage Juice. G. Cheney.—p. 10.
Hemostasis with Absorbable Material in Operations on the Foot. A. Gottlieb.—p. 15.
Poliomyelitis in Pregnancy. Jane Schaefer and E. B. Shaw.—p. 16.
Anesthetic Morbidity. E. H. Warnock.—p. 19.
Metabolic Effects of Renal Insufficiency in Children. F. S. Smyth.—p. 23.
Problems in Radiologic Interpretation. J. Yerushalmy.—p. 26.
Opportunities and Responsibilities of General Practitioner. S. R. Truman.—p. 31.
Why Some Adults Do Not Drink Milk. R. M. Moose.—p. 34.
Comparison of Ceratin Actions of Demerol and Methadone. M. L. Tainter and O. H. Buchanan.—p. 35.

**Cabbage Juice for Peptic Ulcer.**—Cheney describes observations on 13 patients with peptic ulcer who were treated with cabbage juice. Experiments indicate that this juice contains an antipeptic ulcer factor (vitamin U), which prevents the development of histamine-induced ulcers in guinea pigs. Since computations on animals suggested that a patient would require about 720 cc. of this juice daily, it was decided to give 1,000 cc. daily, but occasionally patients took only 500 or 600 cc. daily for a day or two until they became used to this beverage. Fresh juice was prepared by means of a juice press twice daily. About 2 Kg. of cabbage were required to produce 1,000 cc. of juice. Since an addition of celery juice made the beverage more palatable and since celery was known to contain the antipeptic ulcer factor, 25 per cent of celery juice was mixed with 75 per cent of cabbage juice. The juice was given five times daily in doses of 200 cc. each. The average period required for the healing of the crater was 10.4 days in the 7 patients with duodenal ulcer, and 7.3 days in the 6 patients with gastric ulcer. The rapid healing of peptic ulcer after treatment with cabbage juice suggests that a deficiency in a dietary factor may play a part in the genesis of peptic ulcer.

## Canadian Medical Association Journal, Montreal

### **60:**113-214 (Feb.) 1949

Heroin, Demerol, and Hyoscine in Labor. M. M. Davis and W. R. C. Tupper.—p. 113.
Injuries to Bile Ducts—Their Prevention and Repair. P. H. T. Thorlakson.—p. 119.
Neuropsychiatry and Medicine. G. W. FitzGerald.—p. 125.
Experience with Leukotomy at Provincial Mental Hospital, British Columbia. F. Turnbull and A. Davidson.—p. 130.
Dicumarol in Acute Coronary Occlusion. J. H. B. Hilton, W. M. Cameron, S. R. Townsend and E. S. Mills.—p. 134.
Reflex Sympathetic Dystrophy. J. A. Noble.—p. 135.
Symptomatology of Liver Disease. D. L. McNeil.—p. 140.
Episode of Carbon Tetrachloride Poisoning with Renal Complications. E. L. Morgan, J. P. Wyatt and R. B. Sutherland.—p. 145.
Venous Catheterization: Review. W. Leith and B. Rose.—p. 151.
New Preparation for Sedation in Organic Brain Disease and Senile Disturbances. H. Lehmann.—p. 157.
Xenopus Pregnancy Test. S. S. Polack.—p. 159.
Osteoarthritis of Hip. A. Robinson.—p. 161.

## Cancer Research, Baltimore

### **9:**1-64 (Jan.) 1949

Comparison of Activators of Proteolytic Enzymes and Peptidases in Normal Rat Livers and Hepatomas. P. C. Zamecnik and Mary L. Stephenson.—p. 3.
Chemical Investigation of Keratin and Carcinomas Deriving from Rabbit Papillomas (Shope). H. W. Scherp and J. T. Syverton.—p. 12.
Effects of Antireticular Cytotoxic Serum on Brown-Pearce Carcinoma of Rabbit. D. Movitz, O. Saphir and A. A. Strauss.—p. 17.
In Vitro Studies on Effect of Spleen, Striated Muscle, and Kidney on Growth of Sarcoma 180 and Mammary Carcinoma of Mice. L. O. Jones.—p. 27.
Further Studies on Pathogenesis of Ovarian Tumors in Mice. Min Hsin Li and W. U. Gardner.—p. 35.
Dehydrogenase Studies of Tissue from Normal and Tumor-Bearing Mice. I: Total Dehydrogenase Activity. M. Agatha Riehl and M. Petra Lenta.—p. 42.
Id.: II. Lactic and Malic Dehydrogenases. M. Petra Lenta and M. Agatha Riehl.—p. 47.
Serial Intraocular Transplantation of Frog Carcinoma for Fourteen Generations. H. Schlumberger and B. Lucké.—p. 52.
Transplantation of Heterologous Tumors by Intravenous Inoculation of Chick Embryo. Doris H. Bender, C. E. Friedgood and H. F. Lee.—p. 61.

## Cincinnati Journal of Medicine

### **30:**59-116 (Feb.) 1949

Century of Public Health—What It Has Accomplished. L. I. Dublin.—p. 59.
Defense Mechanisms of Host in Relation to Chemotherapy of Acute Bacterial Infections. W. B. Wood Jr.—p. 65.
Role of Plastic Surgery in Treatment of Various Dermatologic Lesions. P. W. Greeley.—p. 70.

## Diseases of Chest, Chicago

### **15:**125-254 (Feb.) 1949

Bacteriologic Examination of Tissues Surgically Removed as an Aid in the Diagnosis of Diseases of Chest. H. J. Moersch, L. A. Weed and J. R. McDonald.—p. 125.
Appraisal of Results of Six-Year Tuberculin and Mass X-Ray Survey of Population of Asuncion: Based on More Than 100,000 Tests. A. R. Gines, E. Gould and J. A. C. Vera.—p. 142.
Bagasse Disease of Lungs. W. A. Sodeman.—p. 162.
Syphilitic Heart Disease. J. F. Briggs and A. Karstens.—p. 168.
Pulmonary Mycoses. A. W. Hobby.—p. 174.
Mediastinal Defect with Interpleural Communication Observed During Pneumothorax Therapy: Report of Case. I. Epstein.—p. 186.
Cystic Disease of Lung. O. C. Brantigan.—p. 192.
Problem of Bronchiectasis: Review. B. E. McGovern.—p. 208.
Case of Aspergillosis of Lung. P. Chortis.—p. 222.
Atelectasis of Right Upper Lobe. J. T. Marengo and J. M. Martinez.—p. 226.

## Gastroenterology, Baltimore

**11**:789-972 (Dec.) 1948

*Radiation Therapy in Peptic Ulcer: Analysis of Results. W. E. Ricketts, W. L. Palmer, J. B. Kirsner and Anna Hamann.—p. 789.
*Radiation Therapy in Peptic Ulcer: Study of Selected Cases. W. E. Ricketts, W. L. Palmer, J. B. Kirsner and Anna Hamann.—p. 807.
Effect of Roentgen Irradiation of Gastric Mucosa. W. E. Ricketts, J. B. Kirsner, Eleanor M. Humphreys and W. L. Palmer.—p. 818.
Treatment of Non-Specific Ulcerative Colitis for One Year with Extracts of Intestinal Mucosa. M. H. F. Friedman and B. F. Haskell.—p. 833.
Oral Treatment of Chronic Duodenal and Jejunal Ulcers with Extract of Pregnant Mare's Urine. R. C. Page and R. R. Heffner.—p. 842.
Development and Evaluation of Gastroscopy. H. J. Moersch.—p. 848.
Involvement of Stomach in Malignant Lymphoma. W. D. Paul and A. B. Hendricks.—p. 854.
Gastroscopic Diagnosis of Location and Extent of Gastric Cancer. C. W. Wirts.—p. 861.
Gastric Diagnosis in Retrospect. G. B. Eusterman.—p. 873.
Flexible Tube Esophagoscopy. E. Boros.—p. 879.
Comparative Buffering Capacity of Intact and Pre-Digested Protein. J. S. Levy.—p. 883.
Comparative Effects of Casein Hydrolysate, Milk and Milk-Cream on Gastric and Duodenal Bulb Acidity in Duodenal Ulcer Patients. M. S. Lopusniak and J. E. Berk.—p. 891.
Production of Gastric and Duodenal Ulcers by Prolonged Administration of Mecholyl. J. Wener, H. E. Hoff and M. A. Simon.—p. 904.
Effect of Mecholyl in Beeswax on Gastric Secretion. J. Wener, D. Karp and H. E. Hoff.—p. 923.

**Radiation Therapy in Peptic Ulcer.**—Ricketts and his associates analyze the results of roentgen irradiation of the fundus and corpus of the stomach in more than 800 cases of peptic ulcer studied from 1936 to 1947. Four different technics were used, but the kilovoltage, filtration, etc., remained the same. The authors feel that because of the variation in the position of the stomach, it would have been advisable to determine fluoroscopically the exact position of the gastric fundus and corpus prior to the irradiation, thus avoiding unnecessary radiation of other tissues and insuring radiation of the desired areas. However, this precaution was not taken in the majority of these cases, the radiation being directed at a location found to be the usual position of the stomach. This error may account for some of the failures; fluoroscopic control is now routine. It was possible to follow the course of 423 patients. There were indications of a direct correlation between depression of gastric secretion and healing of the ulcer. In each of 44 patients with achlorhydria persisting for three months or longer the ulcer healed completely. When irradiation is delivered to the acid-secreting portions of the mucosa, all phases of secretion, chemical, cephalic and intestinal, are depressed as a result of direct cellular injury. Individual variations occur in patients receiving the same amount of radiation, corroborating the view that the result depends not merely on the amount of radiation given, but also on the variable and unpredictable tissue susceptibility. Statistically, the effect varies in direct proportion to the amount given, other factors being equal. There is a higher incidence of postradiation achlorhydria in patients with gastric ulcer than in those with duodenal or jejunal ulcer. The achlorhydria varies in duration from a few days to as long as eight years. Ulcer pain disappears during achlorhydria. Irradiation achlorhydria does not produce symptoms. Recurrence of the ulcer is preceded by reappearance of acid gastric secretion. The incidence of recurrence is definitely lowered by irradiation.

**Radiation Therapy in Selected Cases of Peptic Ulcer.**—Having observed that roentgen irradiation exerts a variable and unpredictable effect on gastric secretion, Ricketts and his co-workers decided to supplement their statistical analysis with a description of some of the more dramatic results and a consideration of some of the failures. The authors present the histories of 3 patients with gastric ulcer. The first one had a long history of ulcer distress until radiation therapy produced prolonged achlorhydria and a dramatic cure of the ulcer. Radiation effected healing of the ulcer likewise in the other 2 patients with gastric ulcer. There were 5 among 50 patients with gastric ulcer in whom healing was not produced by treatment for one month or more with the standard medical antacid regimen and roentgen irradiation. The authors present the case records of 3 patients with duodenal ulcer in whom irradiation produced reduction in gastric secretion and healing of the ulcer. Relatively few cases of jejunal ulcer have been subjected to radiation therapy. The results have often seemed surprisingly good, but the incidence of ultimate recurrence has been high. The authors feel that the ultimate value of radiation therapy in peptic ulcer and its ultimate effect on the gastric mucosa have yet to be determined.

## Geriatrics, Minneapolis

**4**:1-66 (Jan.-Feb.) 1949

Severe Infectious Disease in the Elderly. H. Brainerd.—p. 1.
Study of Depressive States in the Aging. H. E. Clow and E. B. Allen.—p. 11.
Restoration Program for Hip Fractures. S. T. Snedecor.—p. 18.
*Reduction of Surgical Risk in Operations on Elderly Patients. J. D. Bisgard.—p. 22.
Choice of Anesthesia for the Elderly Patient. L. D. Ruttle.—p. 25.
Late After-Effects in Nephrectomized Individuals. J. T. Freeman.—p. 29.
Attitudes and Activities of the Middle-Aged and Aged. L. Pearl Gardner.—p. 33.

**Reduction of Surgical Risk.**—According to Bisgard, every detail in the surgical management of elderly patients, beginning with the history and physical examination and including the anesthesia and preoperative and postoperative care, must be painstakingly carried out. In this age group there is a greater need of team work between the surgeon, internists and other specialists. Preliminary examination should include an estimate of the functional capacity of the cardiovascular and renal systems. There is great need of complete preoperative rehabilitation. Protein deficiency should be corrected preoperatively and prevented postoperatively by supplying of protein in excess of the normal daily requirement of about 1 Gm. of protein for each kilogram of body weight, that is 50 to 100 Gm. Replacement is best accomplished by the oral route, but often this is not possible and one must resort to the parenteral administration of plasma and amino acid mixtures. The elderly patients should be maintained in relative water and electrolyte balance, but particular attention must be exercised to avoid overhydration. If there is any evidence of impaired renal function, lactated Ringer's solution should be used in place of isotonic sodium chloride solution. There is pressing need for transfusions to replace blood loss and to maintain normal blood values. Acute cholecystitis and internal hemorrhage present specific problems in the elderly. Immediate or early cholecystectomy or drainage should be done. Because of arteriosclerosis hemorrhage is more likely to continue to exsanguination so that its management demands more radical treatment.

## Hawaii Medical Journal, Honolulu

**8**:93-144 (Nov.-Dec.) 1948

Streptomycin in Medical and Surgical Treatment of Tuberculosis. R. N. Perlstein and P. W. Gebauer.—p. 93.
Reticulo-Endothelial System. P. Klemperer.—p. 96.
Statistics and Community Health. N. P. Larsen.—p. 103.
Pleural Effusion. D. R. Chisholm.—p. 107.

## J. of American Med. Women's Assn., Nashville, Tenn.

**4**:45-88 (Feb.) 1949

Genetics in General Practice. Ruth E. Taylor.—p. 45.
*Value of Early Recognition and Early Therapy in Cerebral Palsy. Margaret Watkins.—p. 48.
*Rational Use of Estrogens. Chloe O. Fry.—p. 51.
Diabetes Today. Priscilla White.—p. 55.

**Cerebral Palsy.**—According to Watkins cerebral palsy is widespread, for each year there are born 7 per hundred thousand population. Of these 7, 1 will die in infancy and 2 will be feebleminded, leaving 4 who are treatable or educable. Of these 4, the condition of 1 will be severe, of 2 moderate and of 1 mild. The physician should see that the children with this condition are directed to a center where they can be given the proper therapy, the proper education and instruction. It should be remembered that because of impairment of the neuromuscular system these children do not do automatically those things which they should do, but can be taught a different type of muscle control by early training in good patterns of behavior before bad habits are established. The treatment is a combination of physical therapy, occupational therapy and speech therapy. As soon as cerebral palsy is recognized the baby should be started on conditioned exercises. The parents are taught exercises to be given while a simple rhyme is sung; in other words, conditioned response based on Pavlov's experiments. Through constant repetition of the rhyme and the exercise, passive motion is changed to active assisted motion and finally to active motion. The exercises are designed to teach reciprocation of the legs and reach and grasp of the arms and hands.

**The Rational Use of Estrogens.**—Fry is of the opinion that the administration of estrogen "shots" has become a lucrative racket for some who readily attribute symptoms in women between 30 and 60 to the menopause. When used rationally, estrogens do improve well-being, but they are also potentially dangerous. The author discusses the type of estrogen available, the dosage and the mode of administration. She believes that during the menopause the oral route is preferable. Senile or atrophic vaginitis is treated by the nightly introduction into the vagina of a suppository containing estrogen. The estrogen should be discontinued in a month and repeated only if symptoms recur. Some cases of functional dysmenorrhea are dramatically helped by the rational administration of estrogens. The treatment of functional excesses of uterine bleeding is simple and satisfactory since the advent of estrogens and progesterone. The author also comments on the use of hormones in sterility, in the treatment of pregnant diabetic women and in the toxemias of pregnancy. She warns against the abuse of estrogens. She stresses that they should not be given: to anyone who has endometriosis, to the premenopausal woman for irregular periods, to anyone with a family history of carcinoma, to a patient who exhibits or who has had a fibroadenoma of the breast, to anyone who has a fibromyoma or to anyone who has been irradiated for menopausal bleeding.

## Journal of Bone and Joint Surgery, Boston

### 31A: 1-224 (Jan.) 1949. Partial Index

Roentgenographic Changes in Nailed Slipped Capital Femoral Epiphysis. A. Klein, R. J. Joplin, J. A. Reidy and J. Hanelin.—p. 1.
Delayed Autogenous Bone Graft in Treatment of Congenital Pseudarthrosis. J. R. Moore.—p. 23.
Approach to and Exposure of Hip Joint for Mold Arthroplasty. M. N. Smith-Petersen.—p. 40.
*Avascular Necrosis of Large Segmental Fracture Fragments of Long Bones. E. L. Compere.—p. 47.
Treatment of Necrotic Head of Femur in Adults. D. B. Phemister.—p. 55.
Method of Subtrochanteric Limb Shortening. L. Thornton.—p. 81.
Use of Skeletal Traction in Treatment of Fractures of Femur. E. M. Winant.—p. 87.
Open Reduction and Internal Fixation of Fractures of Long Bones. H. L. McLaughlin, S. R. Gaston, C. S. Neer and F. S. Craig.—p. 94.
Critical Observations of Results in Operative Treatment of Scoliosis. W. H. von Lackum and J. P. Miller.—p. 102.
Restricted Jaw Motion Due to Osteochondroma of Coronoid Process. R. T. Shackelford and W. H. Brown.—p. 107.
Congenital Coxa Vara. F. S. Babb, R. K. Ghormley and C. C. Chatterton.—p. 115.
Tumoral Calcinosis. J. E. M. Thomson and F. H. Tanner.—p. 132.
*Iliotibial Band: Its Role in Producing Deformity in Poliomyelitis. C. E. Irwin.—p. 141.
Trephine Biopsy of Bone with Special Reference to Lumbar Vertebral Bodies. R. S. Siffert and A. M. Arkin.—p. 146.
Survival and Growth of Epiphysis After Removal and Replacement. J. A. Key.—p. 150.
Acute Anterior Dislocation of Shoulder. T. Nicola.—p. 153.
Traumatic Posterior (Retroglenoid) Dislocation of Humerus. J. C. Wilson and F. M. McKeever.—p. 160.
Treatment of Recent Dislocations and Fracture Dislocations of Shoulder. H. Milch.—p. 173.
Metastatic Adenocarcinoma of Talus from Rectosigmoid Region: Report of Case. E. W. Johnson Jr. and J. M. Janes.—p. 181.
Bilateral Osteochondritis Dissecans of Patella. S. Kleinberg.—p. 185.

**Avascular Necrosis of Fracture Fragments.**—Compere shows that a large fragment in a comminuted fracture of the femur, tibia, humerus or one of the bones of the forearm may be so detached from surrounding soft tissue that nutrient, metaphysial and periosteal blood vessels supplying the fragment are separated from it. In a diagrammatic illustration of sources of blood supply to the more important long bones the author shows that most long bones have only one principal nutrient artery. Approximately one half of the thickness of the outer cortex of the bone is nourished by the very small periosteal communicating vessels. A segment which is completely detached from the end fragments will retain little blood supply unless the nutrient artery is intact and supplies this fragment. The author presents case reports to demonstrate the typical course of a segmental fracture of a major long bone. He feels that the larger the separate fragment in a segmental fracture in a long bone, the poorer the prognosis from the standpoint of viability of that fragment. In the event that a fragment is partially devitalized and does not retain enough intact blood vessels to maintain a reasonable exchange of arterial and venous blood, some of the bone cells will die. If most of these cells die, the fragment will become necrotic, although massive sequestration does not occur. Union may then be delayed for many months. With good fixation, however, healing of the fracture will take place before the large fragment has undergone complete replacement by creeping substitution. If a principal nutrient artery remains uninjured and supplies the large segmental fragment, aseptic necrosis may not occur, and the prognosis for undelayed healing of the fracture is good.

**The Iliotibial Band Producing Deformity in Poliomyelitis.**—Irwin believes that the iliotibial band with its allied structures is probably the greatest deforming factor in involvement of the lower part of the trunk and lower extremities following infantile paralysis. The iliotibial band is the thickened portion of the fascia lata along its lateral aspect. Involvement of the muscles attached to this band is responsible for the increased tension under which it is placed during the acute and early convalescent stages of poliomyelitis. If the increased tension in the iliotibial band during the acute or early convalescent stage is not released by adequate conservative care, this tension becomes a progressive contracture. Treatment in the acute stage should be continued until the joints of the hip and the knee can be passively carried through their full range of motion in all directions without force and without pain or discomfort. When this has been accomplished, deformities due to contracture will not occur. A contracture of the iliotibial band on one side may contribute to the development of the following deformities: flexion and abduction contractures of the hip; contracture of the thigh in external rotation; genu valgum; knee flexion deformity and external torsion of the tibia; varus deformity of the foot; pelvic obliquity and exaggerated lumbar lordosis. A contracture, or shortening, of the iliotibial band cannot be corrected with conservative stretching and manipulation; neither can it be overcome by the application of plaster casts. Surgical intervention is indicated. A fasciotomy of the Ober type for the hip and a Yount fasciotomy for the iliotibial band and lateral intermuscular septum are the operative procedures of choice. The author briefly describes Ober's fasciotomy and gives his concept of a Yount fasciotomy. He also describes the postoperative correction in cases of unilateral deformity. The surgeon who attempts to correct and to fuse a curve in the lumbar part of the spine, when the pelvis is part of the curve, invites disaster if, before doing the fusion, he does not release all contractures below the crest of the ilium which contribute to the deformity.

## Journal of Clin. Endocrinology, Springfield, Ill.

### 9:1-112 (Jan.) 1949

*Hypercalcemic Syndrome Associated with Androgenic and Estrogenic Therapy. J. B. Herrmann, E. Kirsten and J. S. Krakauer.—p. 1.
Renal Excretion and Tubular Reabsorption of Salt in Cushing's Syndrome After Intravenous Administration of Hypertonic Sodium Chloride. J. P. Kriss and P. H. Futcher.—p. 13.
Graves' Disease: Treatment with Radioiodine ($I^{131}$). M. H. Soley, E. R. Miller and Nadine Foreman.—p. 29.
Development of Diabetes Mellitus in Addison's Disease: Case Report with Autopsy. Abbie I. Knowlton and R. A. Kritzler.—p. 36.
Survey of Scottish Diabetic Clinic: Study of Etiology of Diabetes Mellitus. H. N. Munro, J. C. Eaton and A. Glen.—p. 48.
Effect of Roentgenotherapy on Urinary 17-Ketosteroid Excretion in Ankylosing Spondylarthritis. R. A. Davison, P. Koets and W. C. Kuzell.—p. 79.
*Effect of Vitamin E in Menopause. Rita S. Finkler.—p. 89.
Rapid Colorimetric Method for Determination of Sodium in Biologic Fluids. J. W. Goldzieher and G. C. H. Stone.—p. 95.

**Hypercalcemic Syndrome Associated with Hormone Therapy.**—Herrmann and his co-workers found that in the course of treatment with testosterone propionate and diethylstilbestrol 4 patients, 3 with osteolytic lesions secondary to mammary carcinoma and 1 with an osteolytic lesion of a reticulum cell sarcoma, had toxic reactions associated with hypercalcemia and signs and symptoms of renal insufficiency. Several of these toxic episodes were corrected by the cessation of hormonal therapy and the institution of parenteral therapy consisting of infusions of isotonic sodium chloride and dextrose, and sodium citrate. Subsequent toxic episodes following reinstitution of hormonal therapy proved irreversible and had a lethal outcome. All the patients sustained renal damage with nephrocalcinosis. The hypercalcemic syndrome appears to occur relatively infrequently in patients with osteolytic lesions treated with these hormonal agents. Its incidence might be reduced by careful screening of the patients. Several criteria for the selection of appropriate cases are suggested.

**Vitamin E in the Menopause.**—Finkler resorted to vitamin E therapy in 66 selected patients who complained of the characteristic vasomotor symptoms of the menopause. In 59 of these women it seemed advisable to avoid estrogenic therapy. In the other patients there was no contraindication to the use of estrogens, and vitamin E was administered either before or after estrogenic therapy for the purpose of comparing the results. The daily dose of vitamin E ranged from 20 to 100 mg.; the average was 30 mg. in divided doses. Therapy was continued for periods ranging from ten days to seven months, with an average duration of thirty-one days. Good to excellent results were obtained in 31 women, and fair results in 16. In 19 patients the treatment was ineffectual. Discontinuance of the vitamin E preparation was attended by prompt recurrence of symptoms, with relief resulting again on reinstitution of the medication. Substitution of placebo medication for the vitamin E preparation in 17 patients caused a recurrence of symptoms. No changes in the breasts, uterus or vaginal epithelium were noted during vitamin E therapy. Side effects were negligible and there were no contraindications to its use.

## Journal of Clinical Investigation, Cincinnati

**28**:1-190 (Jan.) 1949. **Partial Index**

Studies in Diabetic Acidosis and Coma, with Particular Emphasis on Retention of Administered Potassium. T. S. Danowski, J. H. Peters, J. C. Rathbun and others.—p. 1.

Simultaneous Measurement of Effective Renal Blood Flow and Cardiac Output in Resting Normal Subjects and Patients with Essential Hypertension. A. A. Bolomey, A. J. Michie, Catharine Michie and others.—p. 10.

*Use of Blood Donors with Positive Serologic Tests for Syphilis—With a Note on Disappearance of Passively Transferred Reagin. M. M. Ravitch, T. W. Farmer and Barbara Davis.—p. 18.

Study of Rate of Disappearance of Digitalis Glycoside (Lanatoside C) from Blood of Man. M. Friedman and R. Bine Jr.—p. 32.

Renal Regulation of Acid-Base Balance in Man. III. Reabsorption and Excretion of Bicarbonate. R. F. Pitts, J. L. Ayer and W. A. Schiess.—p. 35.

Bioassay of Adrenal Corticoids in Urine of Patients with Congestive Heart Failure. A. E. Parrish.—p. 45.

Autoantibodies in Human Glomerulonephritis. K. Lange, M. M. A. Gold, D. Weiner and Vera Simon.—p. 50.

Hyaluronic Acid of Synovial Fluid in Rheumatoid Arthritis. C. Ragan and K. Meyer.—p. 56.

Blood Oxygen Studies in Patients with Polycythemia and in Normal Subjects. L. R. Wasserman, R. L. Dobson and J. H. Lawrence.—p. 60.

Chemical, Clinical and Immunologic Studies on the Products of Human Plasma Fractionation. D. M. Surgenor, B. A. Koechlin and L. E. Strong.—p. 73.

Potassium Deficiency and Role of Kidney in Its Production. R. Tarail and J. R. Elkinton.—p. 99.

Can Vascular Shunting Be Induced in Kidney by Vasoactive Drugs? F. C. Reubi and H. A. Schroeder.—p. 114.

Electrophrenic Respiration. II. Its Use in Man. J. L. Whittenberger, S. J. Sarnoff and Esther Hardenbergh.—p. 124.

Volume of Lung Determined by Helium Dilution: Description of Method and Comparison with Other Procedures. G. R. Meneely and N. L. Kaltreider.—p. 129.

Studies on Human Alcaptonuria: Effect of Thiouracil, Para-Aminobenzoic Acid and Di-Iodotyrosine on Excretion of Hemogentisic Acid. A. G. White, J. G. Parker and F. Block.—p. 140.

Studies on Pain: Measurements of Pain Intensity in Childbirth. J. D. Hardy and C. T. Javert.—p. 153.

Methods for Measuring the Activity of Components of Streptococcal Fibrinolytic System, and Streptococcal Desoxyribonuclease. L. R. Christensen.—p. 163.

**Use of Blood Donors with Positive Serologic Reactions.**—Ravitch and his associates say that before 1939, 12 cases of transfusion syphilis were observed at Johns Hopkins Hospital. Since the establishment of the blood bank in that year, no such cases have been recognized. With serologically tested blood available at all times, transfusion syphilis is no longer caused by the use of untested blood in conditions of dire emergency. However, among the large number of donors bled there must have been some who had lesions of primary syphilis. It is accepted that some 30 per cent of such persons are seronegative. It is from just such donors that one fourth of the cases of transfusion syphilis originated in the past. The authors believe that refrigerator storage is the factor responsible for the fact that such cases have not been observed since 1939. They present studies that were carried out to verify this. Patients given transfusions of plasma from donors with a positive serologic reaction for syphilis will acquire a positive serologic reaction for syphilis. The initial titer of the acquired serologic reaction for syphilis represents the dilution in the recipient's blood volume of the reagin contained in the injected plasma. In all of 16 recipients the acquired positive serologic reaction for syphilis had reverted to negative by the twentieth day or before. The authors are of the opinion that blood of donors with syphilis should be acceptable for use in any blood bank with a plasma program, provided the material has been frozen, dried from the frozen state or stored at least four days in the refrigerator.

## Journal of Experimental Medicine, New York

**89**:131-268 (Feb.) 1949. **Partial Index**

Renin Proteinuria in Rat: I. Relation Between Proteinuria and Pressor Effect of Renin. T. Addis, Evalyn Barrett, R. I. Boyd and Helen J. Ureen.—p. 131.

Cell Blockade in Newcastle Disease of Chickens and Chicken Embryos. F. B. Bang.—p. 141.

Effect of Diet on Susceptibility of Mouse to Pneumonia Virus of Mice (PVM): I. Influence of Pyridoxine in Period After Inoculation of Virus. W. B. Leftwich and G. S. Mirick.—p. 155.

Movement of Water in Tissues Removed from Body and Its Relation to Movement of Water During Life. E. L. Opie.—p. 185.

Nature of Virus Receptors of Red Cells: III. Partial Purification of Virus Agglutination Inhibitor in Human Plasma. G. K. Hirst.—p. 223.

Further Observations on Production and Prevention of Dietary Hepatic Injury in Rats. P. György and H. Goldblatt.—p. 245.

## Journal of Investigative Dermatology, Baltimore

**12**:1-79 (Jan.) 1949

Condensation of Phenol and Formaldehyde to Produce a Sensitizer Unrelated to Formaldehyde Component. L. E. Gaul and G. B. Underwood.—p. 1.

Artificially Induced Resistance of Trichophyton Gypseum to Pelargonic Acid. J. C. Murphy and S. Rothman.—p. 5.

Mechanism of Melanin Formation by Action of Ultraviolet Radiation. T. B. Fitzpatrick, A. B. Lerner, E. Calkins and W. H. Summerson.—p. 7.

Formation of Dihydroxyphenylalanine from Tyrosine by Coupled Oxidation with Ascorbic Acid. C. G. Van Arman and K. K. Jones.—p. 11.

Studies in Percutaneous Absorption of Radioiodine. O. B. Miller and W. A. Selle.—p. 19.

Sensitization to Monoglycerol Para-Aminobenzoate: Case Report. L. Meltzer and R. L. Baer.—p. 31.

Time-Temperature Relationships in Thermal Blister Formation. C. Williamson and J. R. Scholtz.—p. 41.

Studies on Scratch Tests in Atopic Dermatitis, and Comparison with Intracutaneous Method: Lack or Reproducibility of Results with Scratch Tests. S. R. Narins.—p. 49.

Alpha Ray Treatment of Dermatoses with Thorium X: External Application of Relatively Small Concentrations in Office Practice. H. Pinkus.—p. 61.

Creeping Eruption, Systemic Therapy. J. van de Erve Jr.—p. 69.

## Journal of Lab. and Clinical Medicine, St. Louis

**34**:1-150 (Jan.) 1949

Biologic Decay Periods of Sodium in Normal Man, in Patients with Congestive Heart Failure, and in Patients with Nephrotic Syndrome as Determined by $Na^{22}$ as Tracer. S. Threefoot, G. Burch and P. Reaser.—p. 1.

Theoretic Considerations of Biologic Decay Rates of Isotopes. G. E. Burch, S. A. Threefoot and J. A. Cronvich.—p. 14.

Nature of Altered Renal Function in Lower Nephron Nephrosis. D. Marshall and W. S. Hoffman.—p. 31.

Histopathology of Liver in Human Brucellosis. W. W. Spink, F. W. Hoffbauer, W. W. Walker and R. A. Green.—p. 40.

Treatment of Pneumococcal Pneumonia by Penicillin in Aqueous Solution at Long Intervals: Effectiveness of 2 Doses in First Twenty-Four Hours Followed by Single Daily Injections. M. Hamburger, J. R. Berman, R. T. Thompson and M. A. Blankenhorn.—p. 59.

New Penicillin Products for Sustained Effects. L. Loewe, A. E. Sobel and E. Alture-Werber.—p. 67.

Turbidimetric Assay of Hyaluronidase. Sibylle Tolksdorf, Marian H. McCready, R. McCullagh and E. Schwenk.—p. 74.

Sickle Cell Disease: Studied by Measuring Survival of Transfused Red Blood Cells. Sheila T. E. Callender, J. F. Nickel, C. V. Moore and E. O. Powell.—p. 90.

Use of Thymol Turbidity as Lipid Absorption Test: Experiences with Thymol Turbidity and Zinc Sulfate Turbidity Tests Under Physiologic and Pathologic Conditions. H. Popper, F. Steigmann, Hattie Dyniewicz and A. Dubin.—p. 105.

Bound Glucosamine of Serum Mucoid in Diabetes Mellitus; Fluctuations Observed Under Influence of Insulin. H. R. Jacobs.—p. 116.

Dibutoline as Antidote for Diisopropyl Fluorophosphate Poisoning in Mice. C. H. Biggins.—p. 123.

Pharmacology of Allylthiomethyl- and n-Butylthiomethylpenicillin. C. L. Rose, P. N. Harris, O. K. Behrens and K. K. Chen.—p. 126.

## Journal of the Mount Sinai Hospital, New York

*15:281-336 (Jan.-Feb.) 1949*

Essential Metabolites and Anti-Metabolites. B. C. J. G. Knight.—p. 281.
Amyotrophic Lateral Sclerosis: Report of Case with Inflammatory Lesions as Dominant Feature. M. Marks.—p. 293.
Systolic Click: Variation of Position with Appearance in Early Diastole. Case Report. M. C. Becker, M. M. Halpern and D. S. Kent.—p. 307.
Bilateral Parasagittal Meningioma with Resection of Anterior Third of Superior Longitudinal Sinus. A. Kaplan.—p. 313.
*Insulin Dystrophy. M. Yohalem and H. Pollack.—p. 320.
Specific Treatment of Rhinoscleroma with Streptomycin. M. L. Som and A. E. Jaffin.—p. 326.
Notes on Early History of Leukemia. C. Dreyfus.—p. 330.

**Insulin Dystrophy.**—Yohalem and Pollack say that shortly after the introduction of insulin reports began to appear concerning local atrophy and, less commonly, hypertrophy. The reported incidences varied considerably. The authors investigated this problem on a representative group of patients observed at the Diabetic Clinic of the Mount Sinai Hospital. Two hundred and fifty-five adult patients with diabetes of sufficient severity to require insulin were selected at random. Superficial indurations were considered to represent nonspecific reactions such as are seen in morphine addicts. The positive findings include atrophy of varying degree, hypertrophy, deep indurations of the subcutaneous tissues and combinations of all three. By these rigid criteria 43 per cent of the patients were found to have lesions. Pure atrophy, or atrophy and induration, was found in 33 per cent. Deep induration alone was found in 4 per cent. Hypertrophy was found in only 3 per cent of this series. It was found that the patients with the most severe atrophy were women; their diabetes was mild and easily managed, and they had been taking insulin a relatively short time, none more than six years. A higher percentage of the patients with skin changes were using an oblique technic than those without skin changes. There seemed to be support both in the history of the individual patients and in the decreasing incidence in patients with diabetes of longer duration for the theory that regardless of whether or not the injections were continued in the same site, the lesions, at least in some cases, reconstituted themselves. The cause of the changes seems to be a local quality of the fat tissue.

## Journal of Oral Surgery, Chicago

*7:1-92 (Jan.) 1949*

Necessity for Routine Roentgenographic Examination of Edentulous Patients. L. M. Ennis and H. M. Berry Jr.—p. 3.
Surgical Preparation of the Mouth. F. F. Molt.—p. 20.
Pharmacology of Newer Synthetic Analgesics. M. H. Seevers.—p. 30.
*Penicillin Therapy in Oral Surgery. P. M. Northrop.—p. 39.
Super-Oxygenation in Nitrous Oxide and Oxygen Anesthesia. J. W. Seybold.—p. 55.
Cleft Lip and Palate. A. L. Frew.—p. 59.
Sialolithiasis. E. F. Tholen.—p. 63.
Gunshot Fracture of the Mandible: Report of Case. D. B. Parker.—p. 67.
Osteomyelitis of the Mandible: Report of Case. D. B. Parker.—p. 69.
Repair of Antro-Oral Fistula: Report of Case. R. J. Burch.—p. 72.
Excision of Areolar Hyperplasia with Electrocautery: Report of Case. D. J. Holland Jr.—p. 75.
Chemotherapy of Osteomyelitis of the Mandible: Report of Case. A. J. Karpawich.—p. 76.
Obstructive Submaxillary Salivary Adenitis Caused by Foreign Body: Report of Case. J. B. Smith.—p. 78.

**Penicillin in Oral Surgery.**—Northrop recommends light frosting of a wound or cavity, especially after the removal of an impacted tooth, with penicillin powder of the calcium salt (5,000 units to 1 Gm. of equal parts sulfanilamide and sulfathiazole) as a routine procedure. In addition to this use of powdered penicillin and sulfonamide compounds, any site may be insufflated in the manner recommended, not as a routine method, but when excessive trauma is necessary and where infection or complications are more apt to occur. Since the great majority of dental and oral infections are caused by organisms which are sensitive to penicillin, it seems reasonable to expect considerable benefit from the use of this drug. Penicillin in adequate doses should be administered prophylactically to all patients with endocarditis when traumatic dental procedures must be performed, but also when inflammatory processes exist whereby bacteria may invade the blood stream. When surgical procedures are necessary, 2 cc. of procaine penicillin in oil, or 600,000 units, should be administered in the deltoid or gluteal muscle twenty-four hours prior to surgery. The same preparation and dose should be repeated at the time of operation. This product should be administered again in the same dose twenty-four hours after surgical procedure. Daily injections should be continued, the same dose being used, if oral sepsis is severe and healing does not readily take place, until the danger of bacteremia is over. Injecting 600,000 units of penicillin in a single daily dose over as long a period as necessary would seem indicated in the prophylactic care of any patient with endocarditis when infectious process exists in the oral cavity, in treatment of root canal and gingiva or whenever there is a possibility of bacteremia.

## Journal of Pediatrics, St. Louis

*34:1-130 (Jan.) 1949*

*Role of Sympathetic Nervous System in Acute Poliomyelitis: Preliminary Report. E. Smith, P. Rosenblatt and A. B. Limauro.—p. 1.
*Histoplasmosis in California Children.* Helen B. Pryor.—p. 12.
Cushing's Syndrome in Children. A. L. Chute, G. C. Robinson and W. L. Donohue.—p. 20.
Observations on Use of Procaine-Penicillin. M. J. Carson, Ruth B. Gerstung and H. A. Mazur.—p. 40.
Pathologic Findings in Neonatal Period. J. B. Arey.—p. 44.
Treatment of Ammonia Dermatitis with Diaparene: Report on 500 Cases. R. A. Benson, L. B. Slobody, Lois Lillick and others.—p. 49.
*Prevalance of Colds in Nursery School Children and Non-Nursery School Children. Isabelle Diehl.—p. 52.
Pulmonary Embolism in Childhood. G. F. Stevenson and Fern L. Stevenson.—p. 62.
Dysgerminoma of Ovary in Four-Year-Old Girl with Metastases Clinically Simulating Wilms' Tumor and Adrenal Neuroblastoma. F. B. Mandeville, P. F. Sahyoun and L. E. Sutton Jr.—p. 70.
Phenylpyruvic Oligophrenia in a Jewish Child. P. Cohen and P. J. Kozinn.—p. 76.
Oxygen-Humidity-Aerosol Unit for Infants. J. C. Rathbun and Mary E. Shuman.—p. 80.
*Toxicity of Carinamide: Report of Case. W. Davis and W. T. St. Goar.—p. 83.

**Sympathetic Nervous System in Acute Poliomyelitis.**—Smith and his co-workers present clinical evidence of the involvement of the sympathetic nervous system in acute poliomyelitis which may manifest itself in the cervical region by Horner's syndrome, in the thoracic region by spasm of the pulmonary blood vessels with dilatation and irregularity of the right side of the heart, in the gastric region by pylorospasm, in the intestinal region by constipation or diarrhea, in the rectal region by intestinal obstruction, in the bladder region by retention or incontinence of urine and in the skin by angioparesis or spasm. The blood vessels in the extremity with chronic poliomyelitis have a response similar to the angiospasm of Raynaud's disease or the cramplike pain in intermittent peripheral arterial claudication. Evidence that the blood vessels were in spasm was found in the 12 patients tested with the oscillometer. The excursions were far below normal. Angiospasm was present in the encephalitic, the paralytic and the nonparalytic extremity of acute poliomyelitis. Pathologic changes were found in the lateral horn and in the sympathetic ganglions; these changes substantiate the clinical aspects. The authors found that short wave diathermy with the rhythmic constrictor dilated the blood vessels and increased the blood supply to the extremity. The muscles relaxed and the pain diminished or subsided, only to return when the blood vessels contracted. The authors feel, however, that neither short wave diathermy nor hot packs are the solution for the relief of the muscle spasm and pain in acute poliomyelitis, since these methods do not produce sustained vasodilatation. The method of choice would be a drug.

**Colds in Children Attending Nursery School and in Those Who do Not.**—Subjects of this study by Diehl were 51 children between the ages of 23 months and 56 months. All children were above average in health status. Twenty-five were attending nursery school and 26 were not. The nursery school endeavored to keep sources of infection at a minimum. The number and severity of colds were checked from Jan. 28 to April 8, 1946. There was no statistically reliable difference in the number and severity of colds suffered by children who attended nursery school and those who did not.

**Toxicity of Carinamide.**—Davis and St. Goar report an 11 year old girl with subacute bacterial endocarditis who was successfully treated with penicillin and carinamide. Fever, increased capillary fragility and increased bleeding time occurred, presumably as a toxic effect of the carinamide. The toxicology of the carinamide reaction as manifested by this patient was not clear. Rutin apparently had some beneficial effect in preventing capillary fragility and increase in bleeding time. Beyer and his associates studied the pharmacology and toxicology of carinamide, but did not experience reactions such as illustrated by this patient. It is felt that until more clinical and laboratory experience has been obtained carinamide should be used with caution.

### Journal Pharmacology & Exper. Therap., Baltimore

**95**:1-116 (Jan.) 1949. Partial Index

Studies on Diethylaminoethanol. I. Physiologic Disposition and Action on Cardiac Arrhythmias. B. Rosenberg, H. J. Kayden, P. A. Lief and others.—p. 18.
Antagonism of Curare by Congo Red and Related Compounds. C. J. Kensler.—p. 28.
Pharmacologic Properties of Three New Antihistaminic Drugs. A. M. Lands, J. O. Hoppe, O. H. Siegmund and F. P. Luduena.—p. 45.
Effect of Ethanol and Various Metabolites on Fluoroacetate Poisoning. J. O. Hutchens, H. Wagner, Betty Podolsky and T. M. McMahon. —p. 62.
Histamine Activity of Some Beta-Aminoethyl Heterocyclic Nitrogen Compounds. H. M. Lee and R. G. Jones.—p. 71.
Studies on Toxicity and Mechanism of Action of p-Nitrophenyl Diethyl Thionophosphate (Parathion). K. P. DuBois, J. Doull, P. R. Salerno and J. M. Coon.—p. 79.
Effect of 2, 3-Dimercaptopropanol (BAL) on Toxicity of 2-Methyl-1, 4-Naphthoquinone to Mice. D. A. Richert and A. D. Bass.—p. 92.
Prolongation of Curarizing and Anti-Curarizing Action. H. F. Chase, B. K. Bhattacharya and J. L. Schmidt.—p. 95.
Curariform Activity of N-Methyloxyacanthine. D. F. Marsh, D. A. Herring and C. K. Sleeth.—p. 100.
Effect of Anesthetics on Uptake of Radioactive Phosphorus by Human Erythrocytes. V. Pertzoff and C. L. Gemmill.—p. 106.

### Laval Médical, Quebec

**13**:1089-1218 (Nov.) 1948. Partial Index

*Twenty Cases of Tuberculous Lupus; Results of Two Years' Treatment with Vitamin $D_2$ (Calciferol) in Alcoholic Solution. E. Gaumond. —p. 1089.
Harelip and Cleft Palate. F. Roy and J. Lavoie.—p. 1137.
Arterial Hypertension and Surgery. G. Auger.—p. 1150.
Surgical Treatment of Cancer of Larynx and of Bilateral Paralysis of Vocal Cords; Laryngectomy and Arytenoidectomy. L. Royer and F. Roy.—p. 1166.

**Tuberculous Lupus.**—Gaumond treated 20 patients, 10 men and 10 women between the ages of 24 and 65, who had tuberculous lupus, with vitamin $D_2$ (calciferol). Fifteen milligrams—i.e., 600,000 units—of vitamin $D_2$ in alcoholic solution were given three times during the first week (1,800,000 units) and two times (1,200,000 units) during each of the three following weeks. Treatment was then continued for several months and even for more than a year with 600,000 units of vitamin $D_2$ once a week. A diet poor in fats and sodium chloride is recommended. It seems superfluous to add calcium to the vitamin $D_2$. Clinical and anatomic recovery resulted in 18 patients; a few small lupomas persisted in 2 patients. A temporary exacerbation occurred in nearly all cases at the beginning of the treatment, suggesting a direct biotropic reaction to the tuberculous process. The treatment was well tolerated. The mechanism of action of vitamin $D_2$ (calciferol) has not yet been determined, but disphosphorylation of the enzymes of which Koch's bacillus deprives its host might be considered.

### Minnesota Medicine, St. Paul

**32**:1-112 (Jan.) 1949

Role of X-Ray Pelvimetry in Obstetrics. P. C. Hodges.—p. 33.
Surgery of Veins of Lower Extremity. R. R. Linton.—p. 38.
Thromboembolism and Thrombophlebitis. H. O. McPheeters.—p. 47.
The Papanicolaou Method of Cancer Diagnosis: An Evaluation. K. Ikeda. —p. 54.
Experience with Screening Tests in Detection of Cancer. D. State. —p. 57.
Cancer in Minnesota Children. D. S. Fleming and N. O. Pearce.—p. 62.
Cancer Problem from Standpoint of Practicing Physician in Small Community. D. P. Anderson.—p. 65.
*Amniotic Fluid and Meconium Embolism. S. S. Barron, R. F. Sturley and D. T. Lindsay.—p. 70.

**Amniotic Fluid and Meconium Embolism.**—Barron and his associates review reports on embolism caused by amniotic fluid and report 2 cases of their own. They believe that in labor the fluid and meconium probably are forced into the uterine sinuses by the strongly contracting organ. The fluid can also enter the maternal circulation during cesarean section. The particulate matter of the amniotic fluid—i. e., the meconium, vernix caseosa, lanugo hairs and epithelial squamae—is responsible for the embolic plugging of the pulmonary circulation.

### New England Journal of Medicine, Boston

**240**:203-240 (Feb. 10) 1949

Elecktroshock Therapy in Depressive States: Experience in General Hospital. S. Stone.—p. 203.
Presidential Address. D. W. Parker.—p. 207.
Salt-Losing Nephritis Simulating Adrenocortical Insufficiency: Report of Case. W. H. Sawyer and C. Solez.—p. 210.
Trimeton, a New Antihistaminic Drug: Clinical Evaluation. I. W. Schiller and F. C. Lowell.—p. 215.
Neurology. W. K. Jordan and H. H. Merritt.—p. 217.
Metastasis of Papillary Carcinoma of Bladder to Ovary.—p. 228.
Pulmonary Emphysema. Pulmonary Arteriosclerosis. Cor Pulmonale. —p. 231.

### New York State Journal of Medicine, New York

**49**:113-224 (Jan. 15) 1949

Arthroplasties of Hip. F. E. Stinchfield and R. E. Carroll.—p. 159.
Osteochondritis Dissecans of Talus in Recurrent Ankle Sprains. F. M. Marek.—p. 163.
Recurrent Dislocation of Patella: End Results Following Surgical Treatment. P. Blanco.—p. 169.
Calcareous Bursitis. S. Kleinberg.—p. 171.
Hyperleukocytosis Occurring in Carcinoma of Bladder. L. N. Sussman and J. Litwins.—p. 174.
Common Sources of Error in Diagnosis and Treatment of Chronic *Brucellosis.* H. J. Harris.—p. 177.
Conservative and Surgical Management of Ethmoid and Sphenoid Sinusitis. S. L. Craig.—p. 181.
Urologic Manifestations of Acute Appendicitis. P. B. Wels and W. H. Potter.—p. 185.
Eustachian Tube Irradiation. E. P. Fowler Jr.—p. 187.
BAL (2, 3-Dimercaptopropanol) in Arsenical Optic Neuritis. B. Dattner, I. H. Distelheim and L. Meltzer.—p. 190.
Osteitis Pubis. R. S. Hotchkiss, C. W. Schoenau and A. B. Accettola. —p. 193.

### Plastic and Reconstructive Surgery, Baltimore

**3**:633-772 (Nov.) 1948. Partial Index

Further Consideration of Surgical Management of Chronic Varicose Ulcers. N. Owens and H. Bethea.—p. 633.
*Reconstruction of Auricle with Diced Cartilage Grafts in Vitallium Ear Mold. L. A. Peer.—p. 653.
Management of Severe Burns. W. A. Coakley, R. N. Shapiro and G. W. Robertson.—p. 667.
Final Repair of Severely Injured Hand. R. M. McCormack.—p. 687.
Blood Supply of Cross Leg Pedicle Flaps. R. B. Stark.—p. 694.
Plastic Surgical Treatment of Pseudoxanthoma Elasticum. K. L. Pickrell, J. W. Kelley and F. A. Marzoni.—p. 700.
Heteroplastic and Isoplastic Skin Grafts: Report of Successful Repair by Isografts, of Bilateral Ectropion of Four Eyelids, Due to Ichthyosis Congenita. E. B. Spaeth and O. A. Cappriotti.—p. 707.
Use of Essential Forms in General Plastic Surgery. R. C. Seeley. —p. 713.
Squamous Cell Carcinoma Development on Donor Area Following Removal of Split Thickness Skin Graft. B. S. Jeremiah.—p. 718.

**Reconstruction of Auricle with Diced Cartilage in Vitallium® Mold.**—Peer reported in 1943 a new method for reconstructing an auricle by inserting diced cartilage grafts in a perforated vitallium® ear mold and burying the mold with its cartilage filler beneath the patient's abdominal skin. Connective tissue and blood vessels grew through the openings in the mold and bound the separate cartilage segments together, thus forming a solid but somewhat elastic structure which was an exact duplication of the ear mold. This ear framework, formed with the patient's own rib cartilage and bound together by the patient's own connective tissue, was successfully transplanted beneath the skin in the ear region. The posterior surface of the cartilage and the raw scalp area were later covered with a split graft, and the distorted ear lobe sutured in the normal position. The auricle reconstructed in this manner was satisfactory in general outline and angle, but the finer detail present in the transplanted cartilage framework was obscured by the thickness of the overlying skin on the anterior surface of the auricle. There was also a tendency to form fibrous tissue beneath the skin, and the cartilaginous framework became somewhat flattened. Some of these complications have been overcome by a trimming operation. Since the first case the author has buried twenty-two additional vitallium® ear molds. One mold has been lost due to hematoma with later infection, and one diced cartilage framework became infected following transplantation in the ear region, resulting in partial loss of the cartilage. Seven ears have been completely reconstructed and 13 are in various stages of reconstruction.

## Public Health Reports, Washington, D. C.

**64**:93-120 (Jan. 28) 1949

*Metopon Hydrochloride: Experiment in Clinical Evaluation. N. B. Eddy.—p. 93.
Statistical Studies of Heart Disease: III. Heart Disease Associated with Other Major Causes of Death as Primary or Contributory Cause. Mary Gover.—p. 104.

**64**;121-160 (Feb. 4) 1949

Tuberculosis Control in the Philippines: Annual Report of Tuberculosis Control Division, Philippine Public Health Rehabilitation Program, Year Ending June 30, 1948. L. K. Young.—p. 123.
Pneumonectomy Followed by Immediate Thoracoplasty — Preliminary Report of 3 Cases. R. K. Iverson and H. L. Skinner.—p. 140.

**Metopon Hydrochloride.**—Eddy says that the Committee on Drug Addiction of the National Research Council recommended in 1946 that the new morphine derivative metopon hydrochloride be made available to physicians under the committee's supervision. Special licenses specified that the drug be put up in capsules only for oral administration; that it be sold on Narcotic Order to the attending physician only; that all orders be subject to acceptance by the committee; that the use of the drug be limited to terminal cancer cases, that the physician's statement accompanying an order must satisfactorily indicate fulfilment of that restriction and that the physician would be expected to report back to the committee on the use of the drug. The author, who acted for the committee, stresses that metopon hydrochloride is an effective oral analgesic for chronic pain, the use of which is accompanied by a high incidence of mental clarity and a low incidence of side reactions. Since cross tolerance between other narcotics and metopon seems to exist and since the latter does not fully satisfy an established dependence, the use of metopon is more satisfactory in patients who have little or no previous narcotic medication. Tolerance to metopon develops more slowly than tolerance to morphine.

## Review of Gastroenterology, New York

**16**:1-106 (Jan.) 1949

SYMPOSIUM ON GASTRODUODENAL ULCER:

Differential Diagnosis in Gastric Ulcer. A. W. Allen.—p. 13.
Treatment of Gastric, Duodenal or Jejunal Peptic Ulcer. A. B. Rivers. —p. 18.
Treatment of Gastroduodenal Peptic Ulcers with Protein Hydrolysate and a Nonreactive Aluminum Hydroxide Preparation. A. X. Rossien. —p. 34.
Surgical Therapy in Gastroduodenal Ulcer. P. Thorek.—p. 53.
*Anion Exchange Resin for Medical Management of Peptic Ulcer (Preliminary Report). J. A. Marks.—p. 82.

**16**:107-194 (Feb.) 1949

SYMPOSIUM ON JAUNDICE:

Differential Diagnosis of Jaundice. R. B. Capps.—p. 117.
Clinical and Laboratory Use of Bromosulfalein. C. W. Wirts.—p. 125.
Medical Therapy in Jaundice. I. R. Jankelson and L. R. Milner. —p. 130.
Surgical Therapy in Jaundice. W. B. Crandell.—p. 142.
Mechanism of Modern Serum Tests in Relation to Their Clinical Significance: Magnesium Chloride, Serum Colloidal Gold, Cephalin-Cholesterol, Turbidity Tests. R. Bauer.—p. 158.
Stercoral Ulcers of Terminal Ileum. A. Pollak.—p. 171.
Gastric Neurofibroma (Case Report). D. C. Browne, G. McHardy and S. G. Mack.—p. 177.

**Anion Exchange Resin for Peptic Ulcer.**—Mark says that a synthetic resin, a polyethylene polyamine methylene substituted resin of diphenylol dimethyl methane and formaldehyde in basic form, was introduced by Spears and Pfeiffer and Kraemer for the medical management of peptic ulcers. Segal and associates reported that this resin was nontoxic in laboratory animals even when fed in large amounts over a long period of time. Marks reports his experiences with this resin in 30 unselected patients with peptic ulcer. The anion exchange resin (200 mesh) was available in two forms: capsules containing 0.25 Gm. each and cachets of 1 Gm. These were used interchangeably, the usual dose being 2 to 4 capsules or 1 cachet every two hours during waking time, with additional doses if required for pain at night. A generous bland diet was allowed and the use of other medication (sedatives, antispasmodics) restricted as much as possible. All the patients were ambulant. As symptoms subsided the dose was given every three hours and maintained from four to six weeks and longer when possible. Twenty-five of the 30 patients were favorably influenced by the resin either to the point of complete relief of symptoms or to a degree greater than that obtained with previously used alkalis. No undesirable side effects on bowel function, gastric secretion or acid-base balance were observed, and the author concludes that an anion exchange resin of this type is a useful adjunct in the symptomatic treatment of peptic ulcer.

## Surgery, Gynecology and Obstretrics, Chicago

**88**:145-272 (Feb.) 1949

Vaginal and Ovarian Metastases from Hypernephroma. Report of Case and Review of Literature. K. H. Martzloff and C. H. Manlove. —p. 145.
Vesicovaginal Fistula and Its Management with a Description of an Intravesical Operation for Certain Difficult Cases. L. E. Phaneuf and R. C. Graves.—p. 155.
Microplethysmography as Criterion for Sympathectomy in Hypertension. R. S. Megibow and H. Neuhof and S. Feitelberg.—p. 170.
Effects of Sublethal Hemorrhage in Normal Dogs and in Dogs Previously Transfused with Whole Blood. R. Seavers and P. B. Price.—p. 178.
Nature of Postoperative Hypoproteinemia in Patients with Gastrointestinal Cancer. I. M. Ariel.—p. 185.
Use of Beta-Methylcholine Urethane in Postoperative Urinary Retention. F. K. Garvey, N. C. Bowman and W. L. Alsobrook.—p. 196.
*Effect of Sulfathalidine on Bleeding and Clotting Time of Blood and Prolongation Reduction by Administration of Vitamin K. L. T. Wright, F. R. Cole and Y. M. Hill Jr.—p. 201.
One Stage End-To-End Anastomosis of Colon: Analysis of Complications in 79 Cases with Comparison of Open and Aseptic Types of Anastomoses. G. P. Rosemond, W. E. Burnett and F. N. Cooke. —p. 209.
Pseudocysts of Pancreas: Report of 31 Cases. K. A. Meyer, A. I. Sheridan and R. F. Murphy.—p. 219.
*Endometriosis—Its Surgical Significance: Critical Analysis of 179 Cases. F. J. Kelly and K. R. Schlademan.—p. 230.
Etiology of Stress Incontinence. S. R. Muellner.—p. 237.
Anterior Poliomyelitis; Early and Late Electrical Stimulation of Muscles. S. L. Osborne, A. J. Kosman, H. D. Bouman and others.—p. 243.
Consequences of Section of Pancreatic Duct: Experimental Study. H. L. Popper.—p. 254.
*Expectant Treatment of Placenta Previa: Study of 50 Maternal Deaths. C. A. Gordon and A. H. Rosenthal.—p. 259.

**Effect of Phthalylsulfathiazole on Bleeding Time.**—Wright and his co-workers point out that sulfathalidine® (phthalylsulfathiazole), which effects a considerable reduction of the gram-negative bacteria of the bowel, also frequently causes an increase in bleeding. Other observers had noted a severe vitamin K deficiency with prolongation of clotting time in connection with the use of various sulfonamide compounds. This had been ascribed to the fact that bacteria are a natural source of vitamin K. The authors determined the bleeding time of patients before phthalylsulfathiazole therapy was started and after the patients had been given this drug. On the basis of their observations on 71 patients the authors arrive at the following conclusion: 1. When administered in therapeutic doses phthalylsulfathiazole increased the bleeding and clotting time. 2. The administration of vitamin K reduced this prolongation of the bleeding and clotting time in most instances. 3. All patients who received phthalylsulfathiazole preoperatively and postoperatively should, at the same time, receive vitamin K in order to prevent vitamin K deficiency and an increase in the bleeding and clotting time.

**Endometriosis: Its Surgical Significance.**—During 1,991 consecutive abdominal gynecologic operations Kelly and Schlademan found 179 histologically verified cases of endometriosis. The average age of these patients was 38 years. Endometriosis presents a gross appearance referred to as "puckered" areas, especially in the advanced stages. Early manifestations are characteristic in their "blueberry spot" form. Adhesions due to endometriosis are frequent and should not be confused with those caused by other pelvic inflammatory disease. The adhesions of the latter are generally broad and easily torn, while those of the former are tough and solid. Fixed retroversion of the uterus should always cause suspicion of endometriosis. Endometriosis has a low diagnostic index because of the variable history, symptoms and physical findings. The factor of increasing dysmenorrhea is frequent. With a complaint of painful periods it should be determined whether or not the dysmenorrhea has been present since menarche or has been acquired later. In most cases of endometriosis, the latter situation prevails. Thirty-two of the 179 patients had lesions of the rectosigmoid. Many of these complained of painful defecation, abdominal distention or flatulence immediately prior to or during the menstrual period. The peritoneal surface of the uterus, the wall of the uterus and the cul-de-sac were the most frequent sites of endometriosis. The extent and location of lesions and the age of the patient are decisive factors in the choice of the operation. Although most surgeons are in agreement that it is worth while to spend thirty minutes or more excising individual lesions rather than perform more radical procedures, the authors had to do radical procedures in 132 of their patients (hysterectomy in 130 and bilateral oophorectomy in 2). Thirty-eight of the women could be regarded as relatively fertile after surgical treatment. Eleven pregnancies have occurred in these 38 patients. *Although radical operations are often necessary, conservatism is advisable whenever possible.*

**Expectant Treatment of Placenta Previa.**—Gordon and Rosenthal point out that placenta previa is an important cause of maternal mortality and that the expectant treatment advocated by some is based on their experience and belief that hemorrhage, whether initial bleeding or subsequent and no matter how often repeated, will not cause death in the absence of vaginal examination or manipulation. They have studied 50 case reports of maternal deaths associated with placenta previa. In this series, antepartum hemorrhage caused death in but 1 patient, whose atypical symptoms point to an unusual degree of abruptio associated with placenta previa. Death was largely due to intrapartum and postpartum hemorrhage, operative trauma and sepsis. Blood replacement was for the most part inadequate. The dangers incident to mismanagement of delivery are far greater than the risk of prior expectant treatment. Vaginal or rectal examination should not be performed at home. Following admission to the hospital, after the first hemorrhage, the vagina and cervix should be inspected through a speculum which has been cautiously introduced. In the interest of the fetus, no other vaginal examination should be performed, notwithstanding recurrent bleeding, until one decides to terminate expectant treatment in about the thirty-eighth week of pregnancy, and then only when preparations for delivery, by cesarean section or otherwise, are complete with suitable blood replacement. Tamponade and dilating bags are obsolete, and version nearly so. Cesarean section will be indicated in most cases. Expectant treatment of placenta previa is safe under proper conditions. The patient should remain in the hospital during the period of expectancy.

## Texas State Journal of Medicine, Fort Worth

### 45:1-68 (Jan.) 1949

Cholecystopathies from Anomalies of Gallbladder and Its Ducts. M. O. Rouse and V. I. Lyday.—p. 10.
Preoperative Liver Function. L. W. Johnston.—p. 15.
*Treatment of Biliary Obstruction: Recent Advances. W. Walters.—p. 18.
Management of Hyperthyroidism. F. H. Lahey.—p. 25.
Diet in Diabetes Mellitus. E. L. Rippy.—p. 29.

**Treatment of Biliary Obstruction.**—Walter stresses that the degree of pathologic change in the gallbladder frequently is at variance with the severity of the symptoms, and hence the exact nature of the degree of pathologic change in the gallbladder cannot always be determined before operation. Although the cholecystogram is accurate in its positive disclosure of disease and stones, there may be stones which are nonopaque to roentgen rays. Many patients with cholecystitis and symptoms resulting therefrom have been given a diagnosis of angina pectoris. In the absence of a history of jaundice, stones in the common bile duct frequently are overlooked at operation. Noncalcareous benign obstruction of the biliary tract was found in about 10 per cent of a group of patients with recurring biliary colic and jaundice. Stricture of the common and hepatic bile ducts is usually characterized by a biliary fistula or a clinical picture not unlike that of stone in the common bile duct. Excellent results can be expected if the stricture is excised and the ends of the duct are united or the duct above the stricture is anastomosed to the intestine. Even in cases of recurring stricture the outlook is not hopeless, since an external biliary fistula can be established. Patients who give histories of persistent disabling postoperative biliary colic should be suspected of having a stone in the common duct until proved otherwise at exploration of the common duct. If a stone is not present and there is spasm of the sphincter of Oddi, anastomosis between the common duct and the duodenum usually suffices to relieve the attacks of colic. Carcinoma of bile ducts is rare and seldom lends itself to excision. In recent years resection of the head of the pancreas and the ampulla of Vater with the attached portion of duodenum has been performed successfully.

## United States Naval Med. Bulletin, Washington, D. C.

### 49:1-198 (Jan.-Feb.) 1949. Partial Index

Antihistaminic Drugs in Therapy of Common Cold. J. M. Brewster. —p. 1.
*Dicumarol Therapy of Acute Coronary Thrombosis. D. B. Carmichael and H. K. Oetting.—p. 12.
Management of Diabetes Mellitus. J. W. Sherrill, I. L. Morman, R. D. Ross and others.—p. 29.
Reiter's Disease, Behcet's Syndrome, and Stevens-Johnson Disease: Study and Comparison. J. H. Lockwood.—p. 41.
Stevens-Johnson Syndrome: Report of 2 Cases. J. E. Gorman.—p. 50.
Simultaneous Diabetic Coma and Cavernous Sinus Thrombosis: Report of a Case. T. H. Connel Jr.—p. 55.
Cystic Tumors of Maxilla with Report of Case of "Pseudocholesteatoma." A. J. Delaney and T. A. Lesney.—p. 59.
Fistula in Ano of Three-and-One-Half-Month-Old Infant: Report of Case. L. O. Rupe and R. L. Mathis.—p. 72.
Management of Cough. A. W. Hobby.—p. 86.
Thrombocytopenic Purpura Hemorrhagica After Use of Sedormid: Report of Case. J. G. Stubenbord 3d.—p. 97.
*Optic Neuritis and Sinusitis. P. Northington and R. L. Rouen.—p. 101.
Visual Correctibility of Naval Recruits. E. J. Olenick.—p. 104.
Sacro-Iliac Disarticulation (Hemipelvectomy): Report of Case. F. H. Johnson and E. A. Kearney.—p. 110.
Traumatic Pneumocephalus. H. A. Gross and G. F. Stocker.—p. 113.
Operative Positions in Neurosurgery. T. I. Hoen and F. B. Clare. —p. 129.

**Dicumarol® in Acute Coronary Thrombosis.**—In the 73 patients treated by Carmichael and Oetting the diagnosis of coronary thrombosis was established by clinical, electrocardiographic and laboratory methods. Thirty of these were given anticoagulant therapy, and the remaining 43 served as controls. Forty-three per cent of both groups required digitalis. In half of the control patients who received digitalis thrombo-embolic complications developed, while none of the dicumarolized patients receiving digitalis suffered vascular complications. This seems to indicate that digitalis is given with more safety to the patient under anticoagulant control. The administration of dicumarol® had no effect on the degree or duration of pain occurring with acute coronary thrombosis. In the control series there was an incidence of 27.9 per cent of thrombo-embolic phenomena, while among the patients receiving dicumarol® only 6.7 per cent had vascular complications. The average period of strict bed rest was reduced 4.8 days and the average period of hospitalization 7 days by the preventive action of dicumarol® on complicating thrombo-embolic phenomena. The mortality rate of the control group was 16.3 per cent, while that of the treated series was 13.3 per cent. The authors believe that if the incidence of cardiac enlargement, multiple attacks of coronary thrombosis and shock had not been slightly greater in the dicumarolized group, the mortality rate for this group would have been lower. Serious hemorrhage with dicumarol® therapy is uncommon. The authors feel that in patients otherwise suited for anticoagulant therapy the use of dicumarol® should be part of the active therapeutic regimen.

**Optic Neuritis and Sinusitis.**—Northington and Rouen present the case of a woman who was hospitalized with a complaint of pain in the left eye, especially on movement of the eye, pain in the region of the maxillary sinuses and blurring of vision in the left eye. The present illness began ten days before admission when she awakened with obstruction to nasal breathing with profuse drainage. The pain and blurring of vision developed on the third day after onset of illness. Examination disclosed a purulent infection of all the nasal accessory sinuses except the frontal sinuses, but the posterior ethmoids and sphenoids were those chiefly involved. Treatment consisted of penicillin, 30,000 units every three hours; sulfadiazine, 1 Gm. every three hours; thiamine hydrochloride, 25 mg. daily, and irrigations of the sphenoid and maxillary sinuses. The symptoms subsided promptly. On the eleventh day of treatment the sinuses were clear, visual acuity and visual fields were normal, but the slight elevation of the nerve head persisted and did not subside until about three weeks later. The authors feel that in patients with optic neuritis an examination of the nasal accessory sinuses should be included in the search to determine the cause, and when a purulent sinusitis is present, suitable therapeutic measures should be employed.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

### Annals of Tropical Medicine, Liverpool

**42**:253-400 (Dec.) 1948. Partial Index

*Experimental Studies on Therapy of Schistosomiasis. W. Kikuth and R. Gönnert.—p. 256.
Action of Miracil in Schistosoma Japonicum Infections in Laboratory Animals. H. Vogel and W. Minning.—p. 268.
Poisonous Wild Cluster Yam, Dioscorea dumetorum Pax, as Famine Food in Anglo-Egyptian Sudan. N. L. Corkill.—p. 278.
Relapsing Fever in Cyprus. R. M. Gambles and N. F. Coghill.—p. 288.
Field Trials with New Antimalarial Drugs in Egypt. A. Halawani, I. Baz and F. Morcos.—p. 304.
Records of Filaria Infections in Mosquitoes in Ceylon. H. F. Carter.—p. 312.
Mechanisms by Which Mosquitoes and Tsetse-Flies Obtain Their Blood-Meal, Histology of Lesions Produced, and Subsequent Reactions of Mammalian Host; Together with some Observations on Feeding of Chrysops and Cimex. R. M. Gordon and W. Crewe.—p. 334.
Melarsen Oxide in Treatment of Human Trypanosomiasis. E. A. H. Friedheim.—p. 357.

**Experiments on Therapy of Schistosomiasis.**—Kikuth and Gönnert say that the aim of their chemotherapeutic work was discovery of a compound which could be given by mouth and would be suitable for mass treatment. This aim seems to have been accomplished in the discovery of the miracils,® which are compounds belonging to the xanthone and thioxanthone class. These compounds have differing activities in mouse and monkey schistosomiasis. In mice, miracil B® is highly effective. In monkeys, miracil D® is the best and produces cure in one dose of 20 mg. per kilogram or two doses of 10 mg. per kilogram, or sometimes even with two doses of 5 mg. per kilogram. Since the parasite is the same in mouse and monkey, this difference in activity can be due only to the physiologic differences in the two species of animals. Since monkeys physiologically resemble man in many ways, it is believed that miracil D® will be the best preparation for human schistosomiasis. In animal experiments the drug has a practical advantage over present day preparations used for schistosomiasis in that it can be given by mouth. If miracil D,® which is proposed for clinical trial in view of the animal results, should prove insufficiently active it would be desirable to test the related compounds for their value in human therapy. In that case the authors would first recommend miracil B® or the corresponding compound in the thioxanthone series.

### British Medical Journal, London

**1**:166-206 (Jan. 29) 1949

Use of Sex Hormones in Therapeutics. P. M. F. Bishop.—p. 166.
Alternating Orthostatic Hypotension and Hyperthyroidism of Probable Hypophysial-Hypothalamic Origin. F. Vega Diaz.—p. 169.
*Oral Reactions to Penicillin. W. G. Cross.—p. 171.
Carriage of Penicillin-Resistant Staph. Pyogenes in Healthy Adults. T. D. M. Martin and J. E. M. Whitehead.—p. 173.
*Infected Hands Treated with Systemic Penicillin. G. A. Barclay.—p. 175.
Chronic Urethral Obstruction in Children. R. J. Last.—p. 179.
Nephrocalcinosis Infantum with Hyperchloremic Acidosis. H. J. Boutourline-Young.—p. 181.

**Oral Reaction to Penicillin.**—Cross is concerned with reactions to penicillin when used locally in the mouth. His investigations were made on a total of 59 persons, of whom 11 were observed personally. The two common conditions are discoloration of the tongue and stomatitis. Discoloration of the tongue occurs in at least 30 per cent of patients taking penicillin continuously for oral conditions. It is often unnoticed by the patient, and is not accompanied by discomfort. Discoloration begins two to four days after starting treatment and wears off in five to fourteen days. It may be yellowish brown, brownish green, greenish black or black. In a typical case of stomatitis due to penicillin the patient, who has been treated for three to five days with topical penicillin for some oral or pharyngeal condition, complains of soreness of the tongue and at times of the whole mouth and pharynx, with extreme discomfort on taking hot fluids, spiced foods and condiments, or on smoking, and occasionally ageusia and lack of salivation. The condition lasts six to ten days, but the loss of sense of taste may last some weeks. Neither nicotinamide deficiency nor the lozenge base is responsible for these oral reactions. Reactions do not occur until there has been a complete change in the character of the oral flora. This takes about forty-eight hours, and it seems reasonable to limit the use of penicillin for the treatment of oral infections to this length of time as a rule.

**Systemic Penicillin for Infected Hands.**—In an attempt to assess the value of systemic treatment with penicillin in patients with infections of the hand, 200,000 units in one daily dose was given as a routine to the outpatients attending the Infected Hands Clinic at the London Hospital from November 1946 to January 1948. The results in 380 so treated were compared with those not so treated. It was found that this routine did not greatly reduce the period of disability in uncomplicated cases, though there was some improvement. It resulted in the resolution of some early infections without incision and did not increase the disability in infections which had been treated conservatively and which were subsequently incised. It controlled systemic reaction and spread in cases of severe uncomplicated infection. It reduced the period of disability and probably the incidence of complicated cases. It greatly improved the functional end result in cases of arthritis and tenosynovitis. It resulted in a considerable saving of inpatient beds, admission of patients with infected hands being reduced by 52 per cent in spite of a much larger attendance at the outpatient clinic. It was found in terminal pulp infections that with increasing age there was a longer history of pain, a longer period of disability and a greater liability to osteomyelitis.

### Lancet, London

**1**:171-208 (Jan. 29) 1949

Objects of Research: Reorientation Towards Commoner Diseases. S. Alstead.—p. 171.
*Blood Changes in Peritonitis. P. H. Theron and W. C. Wilson.—p. 172.
Serological Evidence of Q Fever in Great Britain. M. G. P. Stoker.—p. 178.
Streptomycin in Whooping-Cough. Herta Schwabacher, R. H. Wilkinson and C. W. C. Karran.—p. 180.
Fatal Anuria After Use of Myanesin in Anesthesia. T. E. W. Goodier and C. E. D. H. Goodhart.—p. 183.
Restriction of Thoracic Respiration as an Aid to Abdominal Palpation. N. J. Nicholson.—p. 184.
Postpartum Hemorrhage Following Eclampsia; Treated by Blood Transfusion. Eleanor M. Sawdon.—p. 185.

**Blood Changes in Peritonitis.**—Theron and Wilson point out that the cause of death in peritonitis and the mechanism of the circulatory collapse which precedes death are in many cases obscure. They studied 35 patients with severe peritonitis; nearly all were sufficiently ill at some time to give cause for anxiety, and 12 eventually died. Operation was done in 33 cases. Other measures included intravenous infusion of isotonic sodium chloride solution and 5 per cent dextrose solution combined with suction drainage of the stomach to prevent or treat ileus. Systemic penicillin therapy was used for pulmonary infections, and in some cases sulfonamide drugs were given as well. Reduction of blood volume, mainly of plasma volume, was fairly common in severe peritonitis. A reduction of 20 to 30 per cent of normal values was found before operation, in about half the cases of recovery and in a larger proportion of fatal cases. Under treatment with intravenous injections of nonprotein fluid the plasma volume in cases of recovery rose to normal or above normal, though in some instances the cell volume continued to fall for some days. In fatal cases the normal volumes were usually not regained, and sometimes a further fall took place before death. Changes in plasma volume were accompanied by parallel changes in total circulating plasma protein and a proportionately greater fall in circulating plasma albumin, the deficit of which persisted for two weeks or longer. The main causes of the volume reductions were ileus and exudation of plasma into the peritoneal cavity. Extravasation of blood into the bowel during ileus may have been partly responsible for the fall in cell volume. There was evidence that reduction of blood volume produced renal injury. Renal failure was sometimes an important cause of death. In some cases the blood volume was very low shortly before death, and the terminal collapse of the circulation could be attributed to oligemia alone. In others the blood volume was nearly normal, and some other factor, possibly bacterial intoxication, had destroyed the efficiency of the circulation.

## Medical Journal of Australia, Sydney

### 1:57-84 (Jan. 15) 1949

Undergraduate Medical Education. F. K. Norris.—p. 57.
Observations on 106 Cases of Recurrent Inguinal Hernia. N. Wyndham.—p. 60.
*Magnesium in Dysmenorrhea. W. J. Rawlings.—p. 61.
Infant Respirator for Treatment of Asphyxia of Newborn. H. S. Patterson.—p. 64.

**Magnesium in Dysmenorrhea.**—Rawlings shows that the psychologic factor is important in dysmenorrhea and that the patient's mental outlook must be studied. The physician should try to find the patient's idea of why menstruation occurs, and if necessary correct or explain the rhythmic cycle in simple terms. In some instances of so-called spasmodic dysmenorrhea there may exist an incoordination of the rhythmic contractions of the corpus of the uterus and the relaxation of the cervical musculature. He discusses previous studies on magnesium in relation to the uterus and describes his results in a clinical trial of magnesium gluconate in doses of 20 grains (1.3 Gm.) for relief of spasmodic dysmenorrhea. In the treatment of premenstrual distress of 15 private patients, 13 were relieved, 2 failed to benefit and 5 were cured; of 4 factory patients, 4 were relieved, no follow-up being possible. In the treatment of menstrual distress of 12 private patients, 10 were relieved, 5 were cured—that is, no recurrence occurred—and 2 obtained partial relief; of 6 factory patients, 1 failed to benefit, 1 obtained doubtful benefit and the remainder were relieved but were not followed up.

## Practitioner, London

### 162:89-172 (Feb.) 1949. Partial Index

Treatment of Angina Pectoris with Special Reference to Drug Therapy. P. T. O'Farrell.—p. 89.
Digitalis and Its Derivatives. T. N. Morgan.—p. 101.
Use and Abuse of the Electrocardiograph. W. Evans.—p. 110.
Traumatic Lesions of Heart and Great Vessels. P. H. Wood.—p. 115.
The Riddle of Rheumatoid Arthritis. R. M. Stecher.—p. 127.
Time Factor in Treatment of Congenital Abnormalities. D. Browne.—p. 132.

## Proceedings of Royal Society of Medicine, London

### 42:1-58 (Jan.) 1949. Partial Index

Host and Tissue Specificity in Infective Disease. W. Smith.—p. 11.
Morbid Anatomist and Cancer Research. R. W. Scarff.—p. 19.
Present Diagnosis and Therapy of Cystic Fibrosis of Pancreas. Dorothy H. Andersen.—p. 25.

## Acta Oto-Laryngologica, Stockholm

### 36:311-552 (Sept.-Dec.) 1948. Partial Index

Treatment of Malignant Tumors of Nasal Sinuses. J. Szpunar.—p. 317.
Penicillin Treatment of Otitis Media Suppurativa. J. Hinge and P. Menck-Thygesen.—p. 333.
Entotic Sounds Following Luxation of Jaw. C. Wille and H. Seyffarth.—p. 340.
Treatment of Tuberculosis of Larynx by Streptomycin Aerosol. C. Larroudé.—p. 363.
Paraplegia After Lumbar Application of Penicillin. R. Hladký and C. Dvořáček.—p. 412.
*Cod Liver Oil in Treatment of Maxillary Sinusitis. T. Hünermann.—p. 447.

**Cod Liver Oil in Maxillary Sinusitis.**—Hünermann began to employ cod liver oil in the treatment of maxillary sinusitis ten years ago. The results obtained were so favorable that since then he has used this method routinely for diagnostic and therapeutic purposes. Following puncture of the maxillary sinus, he introduces, without previous irrigation, 2 cc. of cod liver oil. If there is no swelling of the mucosa and no secretion in the cavity, the cod liver oil remains in the cavity, which ordinarily has a capacity of from 3 to 4 cc. If there is swelling or secretion, the cod liver oil will run out. It will displace any serous or purulent secretion that may be present in the sinus. If only the oil without an admixture of secretion runs out, a polypous proliferation of the mucosal lining exists. Thus, instillation of cod liver oil has a diagnostic value in that it reveals contraction of the lumen and presence and nature of the secretion. The chief purpose of instillation of cod liver oil is therapeutic. It replaces the secretion and exerts a favorable effect on the inflammation. In many instances not only was the suppurating maxillary sinusitis favorably influenced by the cod liver oil, but accompanying bronchitis and otitis media were also cured.

## Annales de l'Institut Pasteur, Paris

### 75:497-600 (Dec.) 1948. Partial Index

Vaccination by Means of Powdered Antigen (Dried After Freezing) and Multiple Puncture Plate: I. Calmette-Guerin Bacillus (BCG). S. R. Rosenthal.—p. 497.
*Experimental Study on Placental Transmission of Penicillin by Comparative Titration of This Antibiotic in Maternal and Fetal Circulations. E. Grasset and E. Edlinger.—p. 510.
*Nuclear Aspects in Course of Various Phenomena of Microbic Lysis.* L. Quersin.—p. 522.

**Placental Transmission of Penicillin.**—Experiments performed by Grasset and Edlinger on 28 pregnant guinea pigs and 12 pregnant rabbits demonstrated placental transmission of penicillin as evidenced by comparative titration of this antibiotic in the circulation of mother and fetus. This transmission is relatively limited. It is influenced by the lapse of time following the injection of the antibiotic. No direct relationship was observed between the amount of penicillin injected into the mother and the level of the antibiotic in the fetal circulation. Under the experimental conditions concentration of penicillin in the fetal circulation may be maintained for three or four hours at a level definitely lower than that of the mother, but nevertheless of antibiotic therapeutic efficiency. The amniotic fluid contained only weak concentrations of penicillin which, toward the end of the period of gestation, were not appreciable by titration. The behavior of the placenta with regard to penicillin seems comparable to that observed with regard to vitamins.

## Geburtshilfe und Frauenheilkunde, Stuttgart

### 8:789-846 (Dec.) 1948. Partial Index

Prevention of Postoperative Adhesions. R. T. von Jaschke.—p. 789.
Blood Transfusions in Obstetrics and Gynecology. A. W. Schwenzer.—p. 792.
*Hormone Therapy in Pains Caused by Endometriosis. F. Hoffmann.—p. 806.
*Injurious Effects on Ovary and Ovum Caused by Hunger and Psychic Trauma.* D. Klebanow.—p. 812.
Complicated, Open Rupture of Symphysis Caused by Spontaneous Delivery. W. Hinz.—p. 820.

**Sex Hormones for Pains of Endometriosis.**—Hoffmann points out that various sex hormones have been used to counteract the pain caused by endometriosis. In an effort to obtain insight into the mode of action of this treatment, the author made comparative therapeutic tests with different sex hormones on a woman, aged 40, who had a histologically verified endometriosis of the abdominal wall. She had pain in small nodules in the groins before and during the menstrual period. The pain first developed after an operation for correction of a retroflexion of the uterus. In a number of menstrual cycles several female and male hormone preparations were injected subcutaneously two or three fingerbreadths above the groin flexures. It was found that the effect of progesterone was somewhat better than that of testosterone, whereas estradiol had no effect whatever on the pain of endometriosis. The efficacy of the various sex hormones on the pain of endometriosis apparently depends on their progesterone content. He recommends progesterone for this purpose. He regards it as possible, but not definitely proved, that this effect is due to the spasmolytic effect of progesterone on smooth muscles.

## Lyon Chirurgical

### 44:1-128 (Jan.-Feb.) 1949. Partial Index

*One Case of Five Year Survival After Duodeno-Pancreatectomy for* Cancer of Ampulla of Vater with Envolvement of Lymph Nodes (and Two and One-Half Year Survival After Hemicolectomy for a Second Primary Tumor of Ascending Colon). A. Brunschwig.—p. 5.
*Possibility of Venous Graft of Large Size (15 to 47 Centimeters) in *Extensive Arterial Thrombosis. R. Leriche and J. Kunlin.—p. 13.*
Microscopic Lesions of 32 Adrenal Capsules, Removed Surgically for Permanent Arterial Hypertension. P. Wertheimer and A. Guichard.—p. 15.
Dystonia of Biliary Tracts and Gastroduodenal Ulcers. P. Mallet-Guy, P. Blondet and M. Moyson.—p. 27.
*Granuloma of Bones. L. Tavernier.—p. 41.*

**Venous Graft in Arterial Thrombosis.**—Leriche and Kunlin report 8 patients with arterial thrombosis who were not benefited by vasodilator methods. Venous grafts, the size of which varied from 15 to 47 cm., were performed on these patients with the aid of heparin. Obliteration of the graft occurred on the third day in 1 patient with a graft of 47 cm., anastomosis having been performed between the iliac artery above and the popliteal below. All the other grafts remained permeable, some of them being followed up for five months, some for three months and the rest for several weeks. In all cases the posterior tibial and the pedal pulse was felt, oscillations were ample, the foot was warm, nutrition was good and ulcers healed. Patients who have not experienced sufficient improvement from sympathectomies may be benefited by this new method.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

### 92:4217-4260 (Dec. 25) 1948. Partial Index

Relapsing Spontaneous Mediastinal Emphysema. A. P. M. Verheugt and H. J. Viersma.—p. 4218.
*Streptomycin in Treatment of Ozena and Purulent Rhinitis. J. H. Frenken.—p. 4223.

**Streptomycin in Ozena.**—Frenken points out that although the Klebsiella species that is regarded as the cause of ozena has been demonstrated to be sensitive to streptomycin, administration of streptomycin by the parenteral route (intramuscularly or intravenously) proved largely ineffective in ozena. The author reasoned that parenteral administration would probably not reach the ozena organisms in the crusts. He instilled a solution of streptomycin into the nose while the patient lay in the ventral decubitus position on a table, the head extending beyond the edge of the table. The head is turned to a side so that the nares are in a horizontal position. Solution is placed in one nostril and then, after it has spread in this nostril, the head is turned and the solution is instilled in the other nostril. Three cases are presented in which this treatment was effective. The solution used was prepared by suspending 1 Gm. (100,000 units) of streptomycin in 30 cc. of isotonic sodium chloride solution. From 2.5 to 3 cc. of this solution is instilled into each nostril three times a day on three consecutive days. Crust formation was reduced by this treatment and all other symptoms of ozena disappeared. Four months have elapsed without a recurrence. The author cites a case of purulent rhinitis in which the described treatment proved effective.

## Nordisk Medicin, Stockholm

### 40:2357-2400 (Dec. 17) 1948. Partial Index

Artificial Kidney: I. Principles and Construction. N. Alwall.—p. 2362.
Pathophysiology of Water, Electrolyte and Protein Metabolism. A. Grönwall.—p. 2366.
*Clinical Symptoms in Disturbances in Water, Salt and Protein Balance. V. Aalkjaer.—p. 2368.
What Laboratory Examinations are Necessary for Control of Water Balance? S. Lindgren.—p. 2369.
Transfusion Agents: Advantages, Dangers and Field of Indication. G. Wilander.—p. 2370.
*Oxygen in Treatment of Disturbances in Water Balance. W. Ohlsson. —p. 2372.
Prophylaxis and Treatment in Shock. H. Rosenqvist.—p. 2376.
Prophylaxis and Treatment in Acidosis and Alkalosis. G. Leander. —p. 2376.
Prophylaxis and Treatment in Protein Deficiency and Anemia. H. Malmros.—p. 2377.
Treatment of Acute Renal Failure with Anuria Oliguria: Importance of Weight Control and Hazards of Excessive Electrolyte-Fluid Supply. N. Alwall.—p. 2378.
Vitamin Administration Before and After Operations. B. Snellman. —p. 2381.

**Clinical Symptoms in Disturbances in Water, Salt and Protein Balance.**—Fully developed disturbances of water, salt and protein balance, Aalkjaer says, can readily be diagnosed, but mixed types and slight disturbances present difficulties and call for various laboratory tests. Dehydration with simultaneous anemia manifests itself by hemoconcentration and small amount of concentrated urine. Acidosis, most frequent in disorders of the urinary tract, is often mistaken for uremia but can be diagnosed at once in the laboratory. Laboratory analyses are essential in the milder degrees of hypoproteinemia and alkalosis and in first stage shock. The laboratory can give the early diagnosis, the specific diagnosis and the quantitative diagnosis, needed for therapy, which is also to be early, specific and quantitative.

**Oxygen in Treatment of Disturbances in Water Balance.**—Ohlsson says that oxygen has proved to be especially valuable in the treatment of shock, not only in control of the hypoxia, but also because of a directly favorable effect on the circulation similar to that following administration of transfusion. As long as the state of shock continues there is no time limit in the treatment of a patient in shock with 100 per cent oxygen.

## Oncologia, Basel

### 1:129-192 (No. 3) 1948. Partial Index

*Gynecomastia with Cancerous Degeneration in Patients with Cancer of Prostate Treated with Estrogen. G. F. Gardini.—p. 129.
Families with High Incidence of Cancer. U. Cocchi and P. Stückelberger.—p. 143.
Benign Giant Cell Tumor with Malignant Degeneration After 4 Years with Pulmonary Metastasis and Hypertrophic Osteoarthropathy of Long Bones. F. Kollbrunner.—p. 153.
Role of Estrogenic Hormone in Pathogenesis of Carcinoma of Uterine Mucosa. L. Váczy.—p. 183.

**Mammary Cancer Following Use of Estrogen in Carcinoma of Prostate.**—Gardini reports a man in whom malignant degeneration of the breast resulted after treatment with estrogen had been continued for fourteen months (total of 350 mg.). The degeneration developed only in the left breast following the bilateral development of gynecomastia. Postmortem examination revealed an epithelial tumor in the prostate and bladder with numerous metastases in bones and lymph nodes. Some of the metastases had been present before the estrogen treatment was begun. The author mentions 9 similar cases in which carcinomatous degeneration of the breast developed in connection with estrogen treatment. This suggests the need for careful supervision of the patients during treatment with estrogenic hormones.

## Presse Médicale, Paris

### 57: 49-64 (Jan. 8) 1949

Study of Cutaneous Test of State of Nutrition and of Aptitude to Reaction in Man. G. Laroche and J. Trémolières.—p. 49.
Results of 4 Years of Bronchial Endoscopy in Course of Primary Infection. A. Dufourt and P. Mounier-Kuhn.—p. 50.
*Is It True That Silicosis is Not Progressive in the Absence of Tuberculosis? J. L. Nicod.—p. 51.

**Progressive Silicosis and Tuberculosis.**—Nicod does not agree with the conclusions of the conference on pneumonoconiosis held in London in April 1947, which asserted that pneumonoconiosis can be arrested spontaneously by the cessation of exposure to dust except for those cases in which silicosis is combined with tuberculosis. He performed necropsies on 150 miners who had been employed in the Swiss Alps and who had died from silicosis. Neither recent nor old tuberculous lesions could be demonstrated on microscopic examination of 35 to 40 per cent of these 150 men who had been working as miners only temporarily, in some cases not longer than one year, and who died from silicosis twelve to twenty-three years after having discontinued work in the silica dust environment. The postmortem examination revealed the progressive course of the silicosis in the pulmonary tissues and in the lymph nodes in the absence of any tuberculous process. In cases in which silicosis was combined with tuberculosis, the latter nearly always developed after the silicotic lesions in the lungs, and frequently it had an acute and terminal course. Tuberculosis is a late complication of the pneumonoconiosis in the great majority of silicotic patients.

## Revista de la Asociación Méd. Argentina, Buenos Aires

### 62:723-774 (Dec. 15-30) 1948. Partial Index

*Mode of Action of Streptomycin on Tubercle Bacilli. C. A. Urquijo and J. A. Durrieu.—p. 726.

**Effect of Streptomycin on Tubercle Bacilli.**—Urquijo and Durrieu describe in detail the technic in testing sensibility or resistance of tubercle bacilli to streptomycin. They used a solid culture medium (Lowenstein-Saenz) on which the bacillary material was planted. The culture medium had been coagulated in the form of a beak, which gave an approximate culturing surface of 22 square centimeters. Twenty culture tubes were prepared for each sputum specimen. Immediately after planting, 4 tubes out of 20 were left as controls. The surface of the culture medium of the remaining 16 was covered with 5 drops of streptomycin solution at different concentrations, each of which contained a dose varying between 0.001 and 1 mg. of streptomycin. All tubes were then placed in an oblique position in the incubator at 37 C. The first reading of the tubes for colonies was made on the fifteenth day after planting, after which the readings were made every week up to the end of the thirty-eighth or forty-sixth day period of observation. At the end of this period it was found that streptomycin-sensitive strains of tubercle bacilli produced a large number of extensive bacterial colonies in the control tubes, delayed, small colonies in tubes with insufficient amount of streptomycin and no colonies at all in the tubes having sufficient amount of the drug. At the end of the period of observation all the tubes were placed in a vertical position and they were left out of the incubator at a maximal temperature of 33 C. for a week. An abundant number of extensive colonies had appeared within this week in 10 out of 28 tubes of three streptomycin-sensitive strains of tubercle bacilli which had had streptomycin solutions of different concentrations. Streptomycin was dissolved in the water of condensation (about 1 cc.) at the bottom of the tube. Near the streptomycin solution in the water of condensation there were no colonies. The authors believe that their findings confirm the opinion that streptomycin has bacteriostatic rather than bactericidal effects on tubercle bacilli.

## Sangre, Santiago

### **1**:9-80 (Sept.-Dec.) 1948. **Partial Index**

*Pseudohemophilia. R. Etcheverri and O. France.—p. 29.

**Pseudohemophilia.**—Pseudohemophilia is a hereditary, congenital, capillary dysplasia, with no predilection for sex. It is due to lack of contractility of the capillaries. The clinical symptoms are similar to those of hemophilia but the time of coagulation of the blood is normal, whereas the bleeding time is prolonged. The subjects of this report are 9 members of a family in which the paternal grandfather, the father and 4 of 5 children had pseudohemophilia, whereas the paternal grandmother, the mother and 1 child were normal. The patients reported here began to bleed at the age of 3 years. Spontaneous, persistent and acute nosebleeds occurred at intervals of two or three months. The two young girls had, occasionally, profuse menstruation of one week's duration. There was neither anemia nor splenomegaly. The blood was normal. The coagulation time was normal. The bleeding time fluctuated between two and thirty minutes on different occasions in the same patient, it was normal during some of the determinations. The platelets were normal in number, but not in structure; they were round and granular. The blood group of the patients had no influence on the heredity of the disease, as the patients belonged to different groups. Blood of the only normal child was of the AB group. Myelograms from 1 of the patients showed medullary hyperplasia with predominance of megakaryocytes, and hyperregeneration of the erythroblasts. Administration of rutin in daily doses of 0.60 Gm. for three consecutive days had no effect on hemorrhages or on the prolonged bleeding time. The only available therapy is symptomatic; splenectomy is contraindicated, as it increases the danger of fatal postoperative hemorrhage.

## Schweizerische medizinische Wochenschrift, Basel

### **79**:1-24 (Jan. 8) 1949

Melkersson-Rosenthal Syndrome. E. Lüscher.—p. 1.
Complications of Central Nervous System in Eclampsia. W. Neuweiler.—p. 3.
*Granulation Preventing and Epithelization Supporting Effect of Penicillin When Applied Locally. S. Rauch.—p. 7.
Treatment of Epilepsy with Mesantoin-Phenobarbital Preparation (Hydantal). R. Stähli.—p. 11.

**Healing of Wounds After Local Treatment with Penicillin.**—Rauch performed experiments on himself producing wounds on both of his arms above the deltoid muscle. He irrigated the wounds on his right arm with a solution of 2,500 to 5,000 units of penicillin, and the wounds on the left arm with isotonic solution of sodium chloride. Closure of the wounds treated with penicillin occurred less rapidly than that of the control wounds. Granulation was more pronounced in control wounds which were infected artificially with staphylococci than in the wounds treated with penicillin. Microscopic examination of the wounds treated with penicillin and of the control wounds showed that the former presented a considerably larger exudation of fibrin and a reduced number of leukocytes as compared with the control wounds. The absence of bacterial toxins may be responsible for the reduced number of leukocytes, while the large exudation of fibrin may be explained by the effect of the penicillin on the capillaries. Intracutaneous tests on patients treated with penicillin and animal experiments in which a drop of penicillin was applied directly to the vessels showed that the effect of the penicillin on the vessels is almost exclusively toxic and allergic only in a very small degree. It is suggested that penicillin interferes with the effect of vitamins, preventing vascular permeability, and that this may be one of the components of its toxic effect on granulation. In the author's experiments, penicillin exerted a better effect on epithelization than diacetylaminoazotoluene, but the effect of sulfathiazole ointment on epithelization was superior to that of penicillin.

### ***79**:25-48 (Jan. 15) 1949. **Partial Index***

Problem of Cesarian Section. E. Anderes.—p. 25.
Epidemic of Scarlet Fever in Basel During 1948. Margrit Esser.—p. 28
*Mass Roentgen Examinations for Tuberculosis During Childhood: Experiences and Results. R. Garsche.—p. 39.
International Combat of Epidemics, One of the Tasks of World Health Organizations. H. Reitzer.—p. 43.

**Mass Roentgen Examination for Tuberculosis During Childhood.**—According to Garsche miniature roentgen examination for the detection of tuberculosis is not as valuable in children as it is in adults. Particularly in younger children, adjustment of the proper position before the screen and awaiting the inspiratory phase requires considerable time. The author believes that the following points should be considered in the mass roentgenography of children: 1. Children less than 6 years old should not be subjected to such examinations. 2. In children up to 10 years, results of practical value require considerable expenditure of time and material. 3. In children over 10 years old, roentgenograms suitable for practical evaluation are obtainable, but even in these children considerably more time is required for examination than is the case in adults. 4. Mass roentgenography of children requires specially trained personnel, who are accustomed to handling children. 5. Evaluation of the roentgenograms should be carried out by a committee which includes a pediatrician with special training in roentgenoscopy. 6. When unselected groups of children are examined the results obtained are not as valuable as in adults and are not commensurate with the expenditure of energy, time and money. Therefore routine roentgenoscopy should be done only in children in whom it is deemed necessary, such as in those who might have been exposed.

## Wiener klinische Wochenschrift, Vienna

### **61**:17-32 (Jan. 14) 1949. **Partial Index**

*Clinical Experiences with Ultrasonic Energy. C. Wiethe.—p. 17.
Early and Late Complications After Strumectomies. R. Oppolzer.—p. 20.
Preoperative Roentgen Irradiation. O. Wichtl.—p. 24.

***Clinical Experiences with Ultrasonic Waves.***—*According* to Wiethe ultrasonic waves are mechanical waves of high frequency. The mode of action of this form of energy is different from that of other physical methods used heretofore. Ultrasonic or suprasonic waves have frequencies exceeding 16,000 per second. Increasing frequency of oscillations and the involved shortening of the wavelengths are accompanied by a bunching of waves, and this in turn results in greater density, which makes this form of energy suitable for diagnostic as well as therapeutic purposes. Frequencies of 500,000 to 2,000,000 oscillations per second are the ones used for therapeutic purposes. The production of mechanical oscillations of such high frequencies is generally effected by two methods, magnetostriction and the piezoelectrical effect. The latter method is the one usually employed in present day ultrasonic wave apparatus. At his clinic, which specializes in otologic disorders, suprasonic waves were employed in otosclerosis, Ménière's disease and in other auditory disturbances. In otosclerosis perception for ordinary speech, as well as for whispering, was greatly improved and the field of hearing was extended to as much as two octaves, chiefly in the lower range. In patients with Ménière's disease pressure in the head, ear noises and vertigo subsided or were improved and hearing was better. Suprasonic waves were tried also on patients with carcinomatous metastases in the region of the neck and later also in primary carcinomas of the parotid gland. Regressive changes were noticeable in the neoplasms.

# Book Notices

**Recent Advances in Cardiology.** By Terence East, M.D., D.M., F.R.C.P., Physician-in-charge of Cardiological Department, King's College Hospital, London, and Curtis Bain, M.C., D.M., F.R.C.P., Physician-in-charge of Cardiographic Department, Royal Bath Hospital, Harrogate. Fourth edition. Cloth. Price, $6.25. Pp. 454, with 125 illustrations. The Blakiston Company, Division of Doubleday Company, Inc., 1012 Walnut St., Philadelphia 5; Toronto, Canada, 1948.

The first edition of this volume appeared in 1929, and the third in 1936. The expanding knowledge of the past ten years required an entire rewriting of the book for this fourth edition. It is, however, more than a review of literature, since the subjects covered are summarized and evaluated in the simple, clear language characteristic of these commentators. The authors remark that "much is in the melting pot" and "what is new and what is an advance is often conjectural." The rapid developments in cardiology make it impossible for books of this sort to be completely up to the moment in their coverage, but the results in this volume justify the difficult screening demanded.

The subjects are first considered etiologically, then under the headings of disorders of function, heart failure, treatment, vascular diseases, peripheral circulatory failure and "new theories about cardiograms."

The discussion of congenital heart disease of necessity lacks reference to Taussig's book, which was in press during the preparation of this volume, and some of the newer knowledge brought out by intracardiac catheterization also was not available.

There is less reliance on, or perhaps experience with, penicillin than would be noted in an American book; for example, in the control of hemolytic streptococcic infections in the pattern of rheumatic fever. The role of penicillin in the treatment of syphilis is considered as still "to be ascertained."

The chapter on hypertension will be found useful, as 162 references are reviewed.

In the prevention of pulmonary embolus it is stated that "If it is certain that there is thrombosis in the leg, ligature of the femoral vein on that side is becoming widely adopted in the United States." The reviewer believes that most authors recommending ligation advise that it be bilateral if there is a suspicion of venous thrombosis on one side.

The discussion of the treatment of heart failure is excellent. Intravenous administration of mercurial diuretics seems to be preferred over intramuscular by these authors, but it may be that the relatively nonirritating mercurials are less available to them; similarly, heroin, which is advised for cough, is no longer legally obtainable in the United States.

The discussion of newer electrocardiographic theory helps to simplify an increasingly abstruse subject. Unipolar leads, the vector cardiogram, the ventricular gradient, and the effects of injury, ischemia, and myocardial infarct are succinctly covered.

In spite of an increasing interest in the recording of heart sounds and murmurs the literature of phonocardiography has been almost completely ignored.

This book will be found valuable by all who wish a compact review of the major advances in the cardiovascular field in the past ten years, as seen through the eyes of critical British clinicians. The book can be recommended for complete reading, or for reference, to medical students, general practitioners, and specialists.

**Pathology.** Edited by W. A. D. Anderson, M.A., M.D., F.A.C.P., Professor of Pathology and Bacteriology, Marquette University School of Medicine, Milwaukee. Cloth. Price, $15. Pp. 1453, with 1193 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1948.

In 1901, when Drs. Hektoen and Riesman published their "American Textbook of Pathology," they had the cooperation of seventeen authors to write on various sections in pathology. At that time it became clear to these authors that science, including medicine and pathology, has made such progress and has become enlarged to such an extent that it has become exceedingly difficult for one person to encompass the entire sphere. Hence, specialists with particular emphasis in a phase of investigation or teaching were called on to contribute chapters in their respective branches. In 1923, Aschoff published two volumes in pathologic anatomy with the assistance of sixteen authors. Here, again, the editor, a renowned pathologist, deemed it advisable to obtain various sections in pathology contributed by experts in their particular field. It is true that before and since the publication of textbooks by Hektoen and Riesman, and Aschoff, textbooks in pathology appeared by individual authors and each book approached the problem of pathology from different points of view. Some authors have stressed anatomic pathology, including histopathologic changes; others have correlated pathologic findings with physiologic and clinical alterations. Some have stressed nutritional, functional and chemical alterations. All have served a definite objective. These textbooks were used either as student textbooks in pathology or as reference books by the more advanced students in the field of pathology.

Anderson's book in pathology is unique in that it transcends all levels of purposes in the field of pathology. It can be used as a textbook for students under the guidance of understanding teachers in pathology. The graduate student as well as the trained pathologist will find valuable information on numerous subjects in Anderson's "Pathology." Here, again, Anderson has obtained the experiences of thirty-one specialists in pathology. Each has contributed one or more chapters pertaining to his particular forte in pathology. This lends strength to the meaning of the book, for we find the discussion of a subject by a seasoned pathologist in that phase of pathologic anatomy which he is most familiar with. Aside from the usual subjects discussed in the textbooks of pathology, there is a more elaborate and valuable dissertation on subjects like physical agents on the causation of injury and disease, chemical injury, effects of radiation, the skin, the bones and joints, subjects which are discussed here in more detail than is usually found in most textbooks on pathology.

Anderson's book covers 1,453 pages. It is rather voluminous as to size. The reviewer at the beginning was somewhat disturbed about the large and small type appearing on practically every page, but this slight disturbance was compensated for by the fact that the authors of this volume had a considerable amount to contribute in the discussion of their subjects. The assumption is that both the editor and the publisher elected to use smaller type in order to save space in the book. But this is a relatively minor comment. The reproductions are very good and illustrate the essential problems in pathology. An added feature of this book is that the bibliography at the end of each chapter covers the most important contributions to the subject. This should be an added advantage to the student in pathology in that his attention is directed to the important literature on the subject, if he desires a more detailed discussion.

Anderson's book is recommended to all students in pathology, in that it covers a variety of subjects with information that is important to every physician and transcends all levels from the student to the experienced physician and teacher. Anderson's "Pathology" should be in the possession of every physician interested in the scientific study of disease processes.

**Handbuch der Therapie: Therapie des praktischen Arztes in Einzeldarstellungen.** Herausgegeben von Prof. Dr. T. Gordonoff, Bern. Lieferung III: Ernährungslehre und Diätetik. Bearbeitet von Dr. Michel J. Demole, Dozent für Diätetik an der Universität Genf, Prof. Dr. A. Fleisch, Director des Physiologischen Instituts der Universität Lausanne, und Dr. Cl. Petitpierre, Dozent für Physiologie an der Universität Lausanne. Paper. Price, 24.80 Swiss francs. Pp. 382. Hans Huber, Marktgasse 9, Bern 16; distributed by Grune & Stratton, Inc., 381 4th Ave., New York 16, 1948.

This is essentially a handbook of practical dietetics for the physician. In contrast with the current custom in writing similar books in the United States, the emphasis is on calories, digestibility and the relations between proteins, fats and carbohydrates, rather than on individual vitamins and amino acids and specific deficiencies. Different categories of patients are taken up systematically rather than the reverse emphasis on the systematic discussion of the nutrients. This makes for a less elegant (or should one say less pretentious?) treatment; it is not necessarily less useful on this account. In any case this is a clinical work, simply and clearly written and yet based on sound knowledge and experience. It may be suspected that this is precisely what the practicing physician really wants and needs in this country, instead of more handbooks and monographs in which the trappings of scholarship invite the researcher rather than the clinician who only wants the best current advice on the dietetic management of his patients. For the research worker, the greatest interest in this book is the exposition of what, in the way of dietary treatment, is actually being recommended for use in Switzerland and the arguments for these recommendations. These turn out to be not dissimilar to good practice in the United States. In both cases it is obvious that the rationale and real scientific evidence for dietetic management are less definite than are the decisions which necessarily are made in every day practice. In both cases it is obvious that, at present, decisions about dietary management must often be made without satisfactory scientific evidence. The task of the physician is to begin his treatment on the best facts and reasoning available, but to be prepared to modify the program according to the progress of the case. The present book gives a good basis for this approach.

**Happy Days with Our Friends.** By Elizabeth Montgomery and W. W. Bauer, M.D. [Including Teaching Suggestions.] Guidebook for the Health and Personal Development, Primer. Cloth. Price, 96 cents. Pp. 80; 95, with illustrations. Scott, Foresman and Company, 433 E. Erie St., Chicago 11, 1948.

This book is designed for the 6 year old and is the introductory volume of a new health series. The teachers' edition offers aids for the instructor in presenting the materials including a statement of aims and purposes, a section on the characteristics and needs of 6 year olds and suggestions for making the most of the health information provided. Lesson plans outline ways in which the twenty stories can be introduced and suggest methods of developing discussion and of furnishing concurrent health education experiences of a functional type. The importance of home-school cooperation and the implications for close parent-teacher contact in solving child health problems are also emphasized.

The stories themselves are closely keyed to the interests of 6 year olds, and the fictional child characters will soon become old familiar friends of the reader. Much of the material is presented through attractive colored pictures which aid in avoiding the problem of too great reading difficulty often encountered in beginning health textbooks. In this connection only a few new words are introduced in each story with the reading level carefully checked so as to make the book one that the whole class can enjoy together. Additional sources of information for the teacher are listed in brief selective bibliographies.

The nature of the text makes it useful both as a supplementary reader and as a means of health instruction. However, if the health education values are to be realized, the health implications will need to be stressed. Physicians need have no hesitancy in endorsing the use of this book in schools where it is to be employed as intended.

**You.** By Helen Shacter, Ph.D., and W. W. Bauer, M.D. [Including Guidebook Material for Teachers.] Guidebook for the Health and Personal Development, Book 5. Cloth. Price, $1.48. Pp. 127; 288, with illustrations. Scott, Foresman and Company, 433 E. Erie St., Chicago 11, 1948.

This is the fifth grade book in a new health series containing a specially prepared section designed to aid the teacher in using the volume. Introductory material outlines aims and describes the needs and characteristics of preadolescents. Methods through which the teacher can contribute to improving the mental and emotional as well as the physical environment in the schoolroom are pointed out. Lesson plans include suggestions for introducing each unit for reading and discussion, and for promoting cooperation between parents and teachers in dealing with the health problems of children. A useful list of books, pamphlets, magazines and films for children, teachers and parents is included.

The material for pupils is not confined to physical health but treats mental health and social growth as an inseparable part of total development. Safety is woven into the content as an integral part of the program of health instruction. Stories of boys and girls who are faced with realistic problems found in daily living will be reflected in the actual experiences of the children who use the books. Excellent illustrations including colored pictures, drawings and cartoons will be an additional positive factor in motivation.

Prepared by a physician-educator team the book is up to date and reliable from both the medical and the pedagogic point of view. School medical advisers and other physicians who may be called on to advise about the use of health textbooks in schools can safely recommend this book.

**The Pharmacologic Principles of Medical Practice: A Textbook on Pharmacology and Therapeutics for Medical Students, Physicians, and the Members of the Professions Allied to Medicine.** By John C. Krantz, Jr., Professor of Pharmacology, School of Medicine, University of Maryland, and C. Jelleff Carr, Associate Professor of Pharmacology, School of Medicine, University of Maryland, Baltimore. Cloth. Price, $10. Pp. 980, with 94 illustrations. The Williams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2, 1949.

In the preface to this volume is the statement "The central purpose of this treatise is to present the pharmacodynamic and pharmacotherapeutic actions of drugs as they are used in the treatment and cure of disease. The principal emphasis of drug action has been the clinical application, as the text is intended mainly for medical students and physicians who must use and evaluate drugs in the treatment of the sick." This purpose has been well fulfilled. The essential actions are described of the agents that have clinical value, and the volume is not encumbered with material of questionable value. The text is divided into nine parts, and these into chapters.

Part I: After a brief introduction, chapters are given to a presentation of the sources and nature of drugs; the various pharmaceutic preparations, pills, powders, the liquids, etc.; prescription writing; methods of administration and dosage, and, finally, a chapter on general pharmacologic principles and the response of cells to drugs.

Part II: The drugs and the newer antibiotics used in the treatment of malaria, syphilis, protozoan infections, helminthiasis, and bacterial infections are discussed. These include the sulfonamide compounds, penicillin, streptomycin and a few others of this group and are well presented. In this and the following sections are presentations of the history and nature of the diseases for which the discussed drugs are used and sketches of the men who discovered them—the latter of value to the medical student, particularly, for he gets little enough of this side of medicine.

Part III is on the response of the skin and mucous membranes to drugs. In part IV the response of the central nervous system to drugs is discussed. One chapter is on the physiology and pharmacology of the central nervous system, and ten chapters deal with the preparations used in therapy of this system—the alcohols, anesthetics, opium and its alkaloids and similar drugs and their addictions and problems; the barbiturates, diphenylhydantoin sodium and kindred drugs; hypnotics, analgesics and depressants. Part V is on the response of the autonomic system to drugs. The anatomy and physiology of these systems are presented clearly and at not too great length, as are the physiology and practical applications of the chemicals and drugs that act on them. The drugs of course include epinephrine and ephedrine, methacholine, the atropine, pilocarpine and physostigmine groups; there are chapters on nicotine, and a helpful discussion of the usage and abuse of tobacco.

The remaining parts present the action of drugs on the heart and circulation in health and disease; in hypertension, in the various diseases of the blood, on the reproductive system and, finally, on metabolism. Part VIII includes chapters on water balance, carbohydrate metabolism and insulin; the thyroid (in which one does miss Marine's work) and the metabolism of calcium and phosphorus in relation to rickets and spasmophilia. Drug poisoning and its treatment are discussed, with the presentation of the drug actions. Twelve pages of useful prescriptions in the metric system (fortunately) complete the text.

There is no special chapter on the use of drugs in pediatric practice, but occasionally useful references and comments are found. For a volume of nearly 1,000 pages this book is relatively small and "easy to handle." The type and paper are excellent; in brief, it is easy to read.

# Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

## HYPERHIDROSIS

*To the Editor:*—1. A young patient complains of excessive perspiration which discolors her clothing. The usual preparations do not bring relief. What treatment is recommended for this condition? 2. What is the best treatment for excessive oiliness of the scalp? The patient has dark brown hair.

M.D., West Virginia.

Answer.—First identify any causes for the hyperhidrosis, such as hyperthyroidism, tuberculosis, diabetes—any organic or functional disturbance of the nervous system, glands of internal secretion and the circulatory system. The application at frequent intervals of astringent preparations containing zinc sulfate, tannic acid or alum, 5 per cent in 70 per cent alcohol or in talcum, may give relief. For localized hyperhidrosis of the palms or the axillas, the application of 25 per cent aluminum chloride, used sparingly and not on irritated skin, is frequently beneficial. In extreme cases, those severe enough to constitute an economic or serious social handicap, benefit may be obtained from filtered roentgen rays carefully administered by an expert radiotherapist.

Excessive oiliness of the scalp usually can be controlled by adherence to a diet low in fats and stimulants, and the application of an astringent lotion for dark hair, such as: resorcinol, 4.0, salicylic acid, 4.0, mercury bichloride, 0.2, glycerine, 2.0 plus water and alcohol (95 per cent) to make 240.0.

## TREATMENT OF COMATOSE PATIENT

*To the Editor:*—How long can a human being be deprived of fluids or other intake before suffering irreparable damage? How long can life be maintained under these circumstances? How soon after a cerebral accident can a comatose patient with severe hypertension and cardiac damage receive fluids?

M.D., Pennsylvania.

Answer.—Many variable factors affect the consequences of dehydration, so that it is impossible to answer the first question. The prior state of water balance, body and environmental temperature, extent of effort, level of basal metabolism, glycogen reserves, tissue and serum proteins and age all alter the reactions to dehydration. The comatose patient should not be permitted to become dehydrated; it is usually wise to begin slow intravenous or subcutaneous administration of fluids within twelve hours of the onset of coma. A twenty-four hour urine output of at least 500 cc., and preferably 1,200 cc., should be maintained by parenteral administration of fluids. Hypertension is not a contraindication. Azotemia (uremia) engendered by oliguria is a serious hazard. Cardiac support can and should be given by incorporating digitalis or digitoxin in the intravenous fluid, in doses as individually required. In the coincident presence of anemia, slow transfusion of whole blood may be indicated.

## TREATMENT OF FOOTBALL INJURIES

*To the Editor:*—I see a great many football injuries. Recently the trainer has been told that ice applied to injuries immediately was dangerous. What is your opinion?

J. R. Tucker, M.D., Williamsburg, Va.

Answer.—Authorities on the treatment of athletic injuries differ with regard to the wisdom of applying ice following certain types of injuries. Stevens and Phelps in their textbook on "The Control of Football Injuries" (New York, A. S. Barnes and Company, 1933) have said: "Compression with the application of an ice bag to constrict blood vessels is the first principle in the treatment of muscle bruises." But Thorndike in his textbook on "Athletic Injuries" (Philadelphia, Lea & Febiger, 1938) has said: "The most annoying skin inflammation that one encounters in caring for athletes is superficial phlebitis, which is the result of immediate packing of sprains and strains in ice. It represents a mild degree of frostbite and comes from careless application of ice to acute injuries. Owing to this complication we have forbidden the use of ice pack treatment altogether. In five years, 10 such cases have been encountered, mostly in thigh contusions. A better treatment is to place the injured part in an ice water whirlpool bath where the same effect is produced without the danger of air pockets and frostbite."

It is obvious that applications of cold are valuable in the early stages of treatment of recent contusions, and the procedure is a sound one provided the ice is not applied carelessly. Perhaps the variation in technic advised by Thorndike might be worthy of consideration. Certainly, with proper technic, such applications cannot be considered extremely dangerous, and, at worst, they can do nothing more than produce, as Thorndike says, "annoying skin inflammation."

## BLUE SCLERA IN NEGROES

*To the Editor:*—1. In the eyes of Negroes are the scleras whiter than in the white race? 2. Do blue scleras occur in Negroes and if so in what percentage?

Edmund P. Fowler, M.D., New York.

Answer.—Adler (Adler, F. H.: Gifford's Textbook of Ophthalmology, ed. 4, Philadelphia, W. B. Saunders Company, 1947, p. 251) stated: "The normal sclera is porcelain white with occasional pigment spots depending upon the general pigmentation of the individual. In the colored race, collections of brownish pigment are frequently found at the points of exit of the anterior ciliary arteries which may readily be mistaken for malignant melanoma."

Duke-Elder (Duke-Elder, W. S.: Text-Book of Ophthalmology, St. Louis, C. V. Mosby Company, 1933, p. 372) spoke of the "Negroid type (Negroes, Melanesians), with deep pigmentation in the superficial layers of the conjunctiva and round poorly-branching cells in the iris. Pergens (1898) noted a marked pericorneal pigment ring in the negroes of the Congo."

Definite cases of blue sclera in Negroes have not been reported, but many cases of blue sclera reported do not state the color or race (about one sixth do not state race). Harnett, W. L. (*Brit. J. Surg.* 22:269-273, 1934) reported "two cases of osteogenesis imperfecta with blue sclerotics in natives of India." Patient 1 was a Bengali boy, aged 10 years, and patient 2 was an Anglo-Indian (Eurasian) girl, aged 10. Jones Joseph (Mollities Ossium, *Tr. Am. M. A.* 20:365-432, 1869) reported a dark mulatto (case 10) aged 24 with fragilitas ossium; no mention was made of color of sclera. The patient's father, a light mulatto, had a niece, color not given, with fragilitas ossium.

## OLIGOSIALIA

*To the Editor:*—A woman 74 years of age has the chief complaint of dryness of the mouth. What saliva there is, is thick, tenacious and mucoid. In April 1947 she had purulent bilateral parotiditis. This cleared up with penicillin treatment but has left the patient as described. She has had a variety of treatments including gargles and sprays, pilocarpine capsules, potassium iodide, ammonium chloride and throat lozenges as well as the usual home remedies, chewing gum, sweet candies and lemon juice. Roentgenograms fail to reveal any calculi in the glands or in their ducts. Autogenous vaccine was suggested and tried without apparent benefit. Please suggest further treatment.

Edward T. Carey, M.D., Clinton, Iowa.

Answer.—The parotid infection, plus the age of the patient, would seem to be the cause of the xerostomia and oligosialia. These subjects have been discussed in Queries and Minor Notes on previous occasions. It would seem necessary to rule out only a few other causes—the use of medications containing belladonna, the presence of diabetes or chronic nephritis, any evidence of autonomic imbalance and the use of an astringent mouth wash.

The best drug to use as a test or treatment is neostigmine bromide (described by Pelner, *Am. J. Digest. Dis.* 9:417 [Dec.] 1942). When a half tablet (7.5 mg.) is given after each meal, a profuse thin salivary secretion occurs, and the oral symptoms subside. It is also suggested that the general health be improved as much as possible and that the oral condition (not mentioned) be treated if indicated, with local therapy and vitamin concentrates (notably B complex and nicotinamide).

## ERYTHROMELALGIA

*To the Editor:*—For a month I have been confined to bed because of a foot condition. Four doctors have been unable definitely to diagnose the condition. Its first appearance was similar to inflammatory rheumatism, but pain was absent except on pressure. Even the slightest pressure gave severe pain. Later the foot became a violent reddish purple; two of my associates thought that it resembled Buerger's disease and a third erythromelalgia. What is the latest information on erythromelalgia, its symptoms and treatment?

John C. Wilson, M.D., Wilcox, Ariz.

Answer:—The information which the inquirer furnishes is inadequate for an exact diagnosis. It is extremely improbable that a person would be confined to bed for a month because of erythromelalgia, which is a circulatory disturbance of the extremities characterized by intermittent episodes of burning distress in one or more digits or one or more extremities (usually the lower extremities) associated with increased warmth and reddish discoloration of the involved part. The skin of the involved parts in erythromelalgia has a "critical point"; that is, a temperature above which burning distress is present and below which burning distress disappears. This critical point has a variable value, but it is ordinarily in the neighborhood of 31 to 32 C. (87.8 to 89.6 F.). One of the characteristics of erythromelalgia is that any measure which will increase the temperature of the skin to a value greater than that of the critical point produces distress, and anything which decreases it to a value less than the critical point will cause the distress to disappear. Thus immersion in warm water (temperature greater than the critical point) will provoke the distress, and immersion of the part in cold water (temperature of a value less than the critical point) will cause the distress to disappear. Unless the inquirer can achieve relief of pain in the affected part by immersion of his foot in cold water, it is certain that he does not have erythromelalgia.

A diagnosis of thromboangiitis obliterans (Buerger's disease) must be based on the history and the findings of ischemia. The latter is characterized by absence of or diminution of the peripheral arterial pulsations, abnormal pallor of the skin of the affected part on elevation, prolonged venous filling time when the feet are moved from the elevated to the dependent position and coldness of the skin of the involved part when it is contrasted with that of the skin of symmetrically placed or companion parts. The possibilities of gout and reflex sympathetic dystrophy should be considered in the differential diagnosis along with some additional unusual conditions.

## FLUOROSCOPY IN OSTEOMYELITIS

**To the Editor:—Of what value is fluoroscopy in confirming the diagnosis of suspected osteomyelitis?**

**Harry J. Weber, M.D., Pakistan, Asia.**

Answer.—Roentgenologic diagnosis of early osteomyelitis is difficult. As compared with the clinical symptoms, the changes that are detectable roentgenologically are rather late in appearing. Roentgenograms of the best quality are needed to show the early manifestations of osteomyelitis. Fluoroscopy is not of value in diagnosing early osteomyelitis, as the changes occurring in that condition would be seen fluoroscopically only when extensive bone changes have occurred. It is probable that by fluoroscopy alone even advanced osteomyelitis could not be distinguished from other bone lesions. Therefore fluoroscopy has little to offer in the diagnosis of osteomyelitis.

## EPILEPSY IN CHILDREN

**To the Editor:—What are the best drugs to begin treatment of a 3 year old epileptic child who has never before had anticonvulsant therapy? This child has had grand and petit mal seizures since it was 10 weeks old. There is probably an etiologic factor of brain damage in this case. The baby was born of an Rh-negative mother and Rh-positive father and had a moderate degree of erythroblastic anemia and jaundice at birth. The infant was successfully treated with transfusions. The number of epileptic seizures of both types have been gradually increasing. Two or three grand mal and five or six petit mal episodes occur daily.**

**G. Alan Neufeld, M.D., Ottawa, Ill.**

Answer.—There are not any "best drugs" for the treatment of epilepsy. Assuming that a patient aged 3 has had epileptic attacks since the age of 10 weeks and that the seizures are on a basis of gross structural changes in the brain, treatment must be so designed as to provide anticonvulsive therapy for years and, perhaps, for the rest of the patient's life. It is also assumed that the nature of the lesion is such that an operation on the brain is not justified. Evidence was not presented of a focal nature of the seizures. Treatment under these conditions should consist of either a ketogenic diet, which has proved to be of considerable value when used in children, or the use of some drug to suppress both the number and the character of the seizures, in the hope of eliminating them without causing damage to the patient or giving rise to such untoward symptoms, resulting from their toxic action, as to make them untenable. Potassium bromide may cause irritation of the skin and therefore frequently cannot be taken continuously. The safest anticonvulsant is phenobarbital. It is not likely to cause untoward symptoms, remains effective over long periods of time and rarely causes gastric disturbance or skin eruption. Primarily useful in controlling attacks of grand mal, phenobarbital is less useful in seizures of the petit mal type. A combined formula, containing phenobarbital and potassium bromide, is often satisfactory. Phenobarbital, moreover, is sometimes combined to advantage with a ketogenic diet, and this is possibly the most advantageous treatment for patients with structural lesions of the brain.

Other drugs are now available, and each or a combination of two or more should be given consideration. They are as follows: diphenylhydantoin sodium (dilantin® sodium), methylphenylethyl hydantoin (mesantoin®), trimethadione (tridione®), or thyphenytoin® (5,5-phenylthienylhydantoin). They require careful evaluation. There is no rule to indicate the most efficient drug or which combination of drugs would be particularly advantageous. The matter must be worked out by a system of trial and error, and failure to do this results in many patients with epilepsy failing to achieve maximum results. It might take at least a year for a physician to find the best formula for this patient. The toxic symptoms resulting from their use may preclude use of any one of the four drugs mentioned in a long time program, even though the immediate results were satisfactory.

Thus the best form of treatment is not at once evident. A cautious but a persistent physician plus a cooperative family with a desire to find a satisfactory remedy should result in ultimate establishment of a successful treatment in a large percentage of patients with epilepsy in early childhood. Further information may be found in the following references:

Peterman, M. G.: Epilepsy in Childhood: Newer Methods of Diagnosis and Treatment, J. A. M. A. **138**: 1012-1019 (Dec. 4) 1948.

Epilepsy in Childhood, correspondence, J. A. M. A. **139**: 174 (Jan. 15) 1949.

Epilepsy in Children, editorial, Lancet **1**: 111-112 (Jan. 15) 1949.

## HORMONES IN BENIGN PROSTATIC HYPERTROPHY

**To the Editor:—Is there any evidence that therapy with female sex hormones ameliorates the condition of benign prostatic hypertrophy?**

**William A. Phillips, M.D., Quakertown, Pa.**

Answer.—The hormone treatment of benign prostatic hypertrophy is based on the established relationship between the prostate and endocrine glands in animals. This same relationship probably also exists in man, but many of its details remain unsolved. For this reason many conflicting observations have crept into medical literature regarding the hormonal treatment of benign prostatic enlargement. The substances most frequently recommended are estrogen, testosterone and inhibin. Favorable and unfavorable treatment results are recorded following their use. Daily small doses (1 to 2 mg. of diethylstilbestrol) of estrogens can temporarily relieve annoying vesical symptoms and produce a mild shrinkage of the prostatic adenoma. These improvements will cease when the drug has been discontinued. Hormones are not known that will permanently reduce the size of a benign enlarged prostate. The greatest usefulness of the estrogens now seems to be in advanced prostatic carcinoma.

## HISTAMINE DESENSITIZATION

**To the Editor:—What is the present status of histamine desensitization with special reference to allergic bronchial asthma in a child?**

**William A. Phillips, M.D., Quakertown, Pa.**

Answer.—Most of the experimental observations indicate that the repeated administration of histamine to animals does not increase the animal's tolerance to this chemical (Clark, W. G., and MacKay, E. M.: Effect of Histamine Pretreatment upon Some Physiological Changes Following Adrenalectomy, *Am. J. Physiol.* 126: 465, 1939. Wells, J. A.; Gray, J. S., and Dragstedt, C. A.: An Investigation of the Question of Histamine Tolerance, *J. Allergy* 13: 77, 1941). There is no good clinical evidence indicating that an increased tolerance in man can be achieved to histamine by its frequent injection. Indeed, clinicians who have been interested in the problem have observed that the tolerance dose of histamine after a series of injections is identical with the person's tolerance dose at the beginning of the treatment (Feinberg, S. M.: Histamine and Antihistaminic Agents: Their Experimental and Therapeutic Status, J. A. M. A. 132: 703, 1946). Possibly, some patients with such conditions as migraine or Ménière's syndrome are benefited by histamine injections. If this does happen, it must be due to a mechanism other than desensitization to histamine. Injections of histamine in the treatment of asthma, first advocated many years ago, has not found supporters in recent years.

## MALE SEX HORMONE IN DIABETES

**To the Editor:—Has male sex hormone been used with benefit in diabetes?**

**F. A. Mills, M.D., Rawlins, Wyo.**

Answer.—Impotency appearing after some years of diabetes is rarely benefited by administration of male sex hormones. In hemochromatosis with diabetes a small series of patients appears to have been helped somewhat as far as improvement in general strength is concerned. Testosterone has been used in a large series of children with benefit for growth but without beneficial influence so far as carbohydrate metabolism was concerned. A normal male should not take testosterone.

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# THE LABORATORY IN DIAGNOSIS AND CONTROL OF DISEASE

FRANK W. KONZELMANN, M.D.
Atlantic City, N. J.

General practitioners form the most important of all the groups in American medicine. I hold this to be true for the following reasons: 1. There are more men in general practice than in any specialty. 2. They have closer contact and more frequent contacts with patients than any specialist. 3. They have more intimate first hand knowledge of the patient and his background and individual medical peculiarities than can be acquired in a few consultations. 4. They see the patient at the beginning of his illness. 5. They see the patient as a whole, not as just an eye, or an ear or a case of abdominal pain. 6. Their day often begins in the early morning hours with a problem in obstetrics and runs through psychiatry, metabolic disease, orthopedics, a little minor surgery, surgical diagnostic problems, pediatrics after school, geriatrics before dinner, cardiology after dinner and diseases of the respiratory tract in the evening office hours.

Longfellow was not thinking of the general practitioner when he wrote, ". . . the cares that infest the day shall fold their tents . . . and silently steal away."

Major surgery is the domain of the surgeon. New technics in minor surgery developed by the surgeon may be passed on to the men in general practice. In like manner, major pathologic technics such as bacteriologic studies, tissue diagnosis, some phases of chemical pathologic work and hematologic studies may be considered the domain of the pathologist. Minor pathologic technics developed in the laboratory by the pathologist should be included in general office practice.

## IMPORTANCE OF HISTORY AND PHYSICAL EXAMINATION

I place examination of the patient by use of the eyes, ears and hands above all else in the diagnosis. Without an adequate history and an expertly performed physical examination, all other diagnostic methods are apt to fail or to yield misleading information. Unless there is an intimate knowledge of the signs and symptoms neither the roentgenologic nor clinical laboratory studies can serve in their most dependable fashion. Haphazardly selected studies add needless expense and effort. In considering pain, one wants to know exactly where it is, how long the patient has had it, whether it radiates, and where; what its character is and whether it is relieved by or accentuated by pressure. To say that a patient has had abdominal pain for two days is not enough. A lengthy case study is not desirable. Sketches and marks on stamped outlines save many words, but questions and examination notes can be "to the point" and can be summed up in a provisional diagnosis or diagnoses. The laboratory can help in ruling out the incorrect and ruling in the correct diagnosis.

In cases of coma, the history may indicate the nature of the lesion. Doctors sometimes neglect this and order studies of blood urea, blood sugar and spinal fluid. One of these should certainly reveal the cause. Of these only the blood urea may appear abnormal, so that one takes for granted that the case is one of uremic coma. In the hospital ward someone performs, for good reason, a study of total nonprotein nitrogen and finds it elevated proportionately to the urea—exactly twice the urea level. The blood chloride level is found to be low—a state of hypochloremia. In retrospect the history reveals some one of the conditions leading to salt depletion—excessive sweating, diarrhea or prolonged vomiting. Much valuable time has been lost. Unnecessary laboratory work was done; essential studies were omitted, and the urea value was misleading. The patient is improved by intravenous injection of salt. If a history is not obtainable, further chemical studies should be made at once, which would distinguish one cause of increase of a blood constituent from another.

## OFFICE LABORATORY

Physicians cannot all have elaborate laboratory facilities at their command, but there are certain facilities which one may strive for, depending on the site of practice, whether it is a rural area, small town or city or a small or large hospital. Successful surgery of some types can be performed in an emergency by someone not a surgeon, with a kitchen knife, scissors and linen thread, with a few spoons for retractors. The physician who expects to meet such emergencies usually supplies himself with more adequate equipment.

A planned, properly supervised laboratory is desirable, but when there is none within 50 or 100 miles, the physician can have someone trained to do a urinalysis, ordinary blood cell count and determination of blood sugar, urea, nonprotein nitrogen, hematocrit, clotting time, bleeding time, prothrombin, total serum proteins, total serum bilirubin and urine urobilinogen, as described in the model laboratory in the exhibits. With ordinary care, sufficient accuracy may be accomplished for differential diagnosis in emergency cases. However, I do not approve of a physician's allowing a technician in his office independently to run a "clinical laboratory" for the benefit of neighboring physi-

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Pathologist, Atlantic City Hospital, Atlantic City, N. J.

Read at the Interim Session of the American Medical Association, St. Louis, Dec. 1, 1948.

cians. Unsupervised, such work is entirely second rate and is invariably carried on not as a diagnostic aid, but as a business proposition. Office laboratory work should be undertaken only when a properly supervised laboratory is not available. The mail is available for transporting specimens to any laboratory equipped for more exacting studies by more intricate methods, when time is not so important a factor. Such facilities are available for almost every physician in this land, if he will but choose his studies wisely and collect his specimens correctly. The question of cost might arise in the case of indigent patients. I believe that, today at least indigence is a little overplayed. In New Jersey, and especially in my county, no examination is refused. Once or twice I have had occasion to ask a physician whether his practice is limited to indigents, or I might question the indigence of a patient living on "Rockefeller Boulevard."

### PURPOSES OF LABORATORY INVESTIGATION

There are indications for every laboratory investigation just as there are for any diagnostic or therapeutic procedure. I have already referred to the uselessness, danger and costliness of haphazard selection of laboratory tests. Three studies may be considered a part of every physical examination: (1) routine urinalysis plus the Harrison spot test for bile pigment, (2) a complete blood cell count and (3) a serologic test for syphilis. These three yield helpful information in such a wide variety of symptom complexes that such a plan of routine examination is time saving. Beyond this point the laboratory may be considered as serving three purposes: (1) to confirm a diagnosis which has been based on clinical signs and symptoms, (2) to reveal accurately the effect of treatment and (3) to reveal the nature of a disease when clinical signs and symptoms are obscure.

*Confirmation of Diagnosis.*—One may argue that laboratory confirmation is not necessary if clinical signs and symptoms are diagnostic. An example to the contrary is the case of a woman of 50 years who had severe anemia. She had had a breast removed because of carcinoma fifteen years previously. There was no evidence of recurrence externally or in a flat plain roentgenogram of the chest. A routine blood cell count revealed macrocytic anemia, and gastric analysis showed absence of hydrochloric acid. A diagnosis of pernicious anemia was made and liver therapy begun. There was not much response. Blood transfusion alone gave some relief. Sternal marrow aspiration showed a hypoplastic state, not a megaloblastic one. Had liver not been administered this observation might have had greater value, for in untreated pernicious anemia there are certain peculiar cells in the marrow called megaloblasts. The anemia in this case could have been classified as a refractory anemia, which is a rather meaningless classification. It seemed that this must be a case of anemia due to marrow destruction, even though roentgenologic study failed to reveal metastatic carcinoma. The whole skeleton was examined and a suspicious area in the femur located. At this point an aspirating needle was inserted. The material obtained showed cancer cells. The patient subsequently died, and at autopsy general spread of carcinoma throughout the bone marrow was revealed. Symptoms of mild or early diabetes with hyperglycemia and glycosuria may not indicate diabetes at all.

A sugar tolerance curve determined in the proper circumstances may uncover some other endocrine disturbance. Coronary artery disease may present symptoms referable to the liver and biliary tract. Properly selected laboratory tests might well locate the lesion in the liver area or establish the absence of pathologic change there. Ruptured gastric ulcer might be simulated by acute pancreatitis, and a serum amylase determination might well prove the existence of a pancreatic lesion.

I saw a patient with the diagnosis of appendicitis operated on without the benefit of a blood cell count. At operation an ulcerated appendix was discovered—a typhoid ulcer. The pronounced leukopenia later demonstrated might have suggested the true nature of the disease and an operation avoided. A more recent case is worthy of comment. A young girl of 16 presented symptoms of menstrual hemorrhages and intermenstrual bleeding. She was being treated for functional uterine bleeding. Delving into the history revealed that her spleen had been removed six or eight years previously because of thrombopenic purpura. Her physician argued that, since her spleen had been removed and she was apparently cured, her present state could not be a manifestation of this disease. Her thrombocyte count proved to be less than 50,000 in several examinations and her clot retraction time delayed. It is highly probable that she had an accessory spleen. If rest in bed at menstrual periods and blood transfusion do not prevent recurrence, exploration would be necessary. Results of laboratory studies would make one suspect that the patient was still suffering from essential thrombopenic purpura and that she still had splenic tissue somewhere.

*Laboratory Studies of Treatment Results.*—No one today attempts to treat diabetes without noting the effect of insulin on the urine and blood sugar. Usually transfusions for anemia are followed by blood cell counts. I have in mind a case of pernicious anemia properly diagnosed, in which the patient was given liver therapy. I urged that it would make a teaching case. There were frequent measurements of red cell size and hemoglobin content as well as total cell counts. The first week showed a good result. The red cell count and hemoglobin rose; the white cell count came up gradually. The size of red cells diminished; the hemoglobin content of the cells dropped slightly, and iron was added to the therapeutic regimen. After several weeks all these values reached normal except the leukocytes, which kept increasing. Then the level of hemoglobin and red cells began to fall, despite treatment. A bed sore had developed, and a cast had been applied to relieve the pressure. Naturally this area came under suspicion. The cast was opened over the area; it seemed clean, but later investigation showed that the infection had spread widely under the skin. This patient died of septicemia. Had the rising leukocyte count been considered more seriously and promptly, she might have lived.

The modern standards of red cell study are well demonstrated in the scientific exhibit. It is worthy of note that macrocytic anemias (large cell anemias) are usually caused by some disturbance of the antianemic factor and are most likely to be helped by liver therapy. The small cell anemias (microcytic anemias), especially if there is a low mean corpuscular hemoglobin (low hemoglobin content in each red cell), are most likely to respond to iron therapy alone. Some are due to systemic disease, such as diabetes and nephritis, and are helped little by iron unless the primary disease is also treated. Anemias in which red cells are of normal size (normocytic) are usually the result of acute hemorrhage or acute blood destruction.

It is frequently not possible to determine by clinical signs alone when some disease processes have subsided completely. In acute hepatitis, for example, jaundice may disappear, the patient may feel as if he has completely recovered, but a thymol turbidity test may reveal, by a positive result, that the process has not subsided. If that patient resumes normal activity, a relapse may occur more serious than the initial disease. The sulfobromophthalein sodium test is also helpful in this same respect. In recovery from acute nephritis, an Addis cell count or a blood urea clearance determination may well indicate the smoldering character of the infectious process. The sedimentation rate of red blood cells has similar significance in coronary disease.

From a public health point of view, a patient with typhoid should never be considered as recovered until the stool and urine are proved to be free of typhoid bacilli. A patient who has had diphtheria should not be discharged until throat smears fail to reveal diphtheria bacilli. A female child should never be admitted to a ward or rooms with other female children until a vaginal smear proves negative for gonococci.

Modern therapy requires control by laboratory studies. Treatment with sulfonamide drugs, gold salts, thiouracil or aminopyrine requires white blood cell counts and differential counts weekly or twice weekly. If the white cells drop to 2,500 per cubic millimeter, caution should be observed. If the white cells fall to 2,000 or 1,500 per cubic millimeter, therapy should be discontinued unless there is some good reason for its continuance. If a differential count is made, one is guided too by the percentage of neutrophils. A low percentage, even with a count of 2,500, is a danger signal during this sort of therapy. It is a wise physician who performs an occasional test for serum bilirubin while administering cinchophen and similar compounds. The first evidence of liver damage by these drugs will be evidenced by a rise in serum bilirubin levels.

*Laboratory Studies in Cases of Obscure Clinical Signs and Symptoms.*—Unexplained fevers call for special consideration. Our forefathers considered fever itself a disease—"lung fever," "childbed fever" and "swamp fever"—but today fever is recognized as only a symptom caused by invasion by some particular organism. For some there is a specific cure; for many, health departments must find the source of contagion so that epidemics may be averted. In all, an accurate diagnosis is necessary. The physician of yesterday was a keen observer of the manifestation of a particular fever—its curve on a chart and the character of its rash, but these are late manifestations. The examination of the blood for parasites and the blood culture for bacteria are helpful in the first week of disease. It must be remembered that a blood culture must not be discarded as negative until five, or preferably ten, days have elapsed. After five days a negative culture should be repeated. In the second week of an unexplained fever, agglutination tests must be considered. It is well to set up tests at one time for typhoid, paratyphoid A and B, Brucella abortus, antigens for the richettsial diseases (B. proteus OX k and OX 19) and B. tularensis. A negative reaction to a test early in the disease must not be considered as final. In undulant fever the reaction may not become positive for months. A positive reaction, unless typical, calls for confirmation. A rising titer observed over a three or four day period is usually conclusive evidence. In this day, when so many persons have been immunized against typhoid, peculiar results are encountered with the typhoid antigens. It is well to have someone experienced in this field help with the interpretation.

Infectious mononucleosis is often confused with a virus infection of the upper part of the respiratory tract and with leukemia. The blood picture in these three conditions may at some stage be similar. The heterophil antibody test will identify infectious mononucleosis rather definitely if the Davidson differential test is included.

In obscure pulmonary disease, it is not sufficient to examine sputum smears for tubercle bacilli. Culture and guinea pig inoculation must be included if the smear is negative. Six weeks ago my co-workers and I encountered 2 cases, 1 of pulmonary infection and 1 of cervical adenitis, in which no tubercle bacilli were seen in direct smear. Both test tube culture and guinea pig inoculation revealed tubercle bacilli at a later period. A search for fungi in the sputum by smear and culture sometimes is surprising in its revelation. A cold agglutination test of red blood cells may identify virus pneumonia. Sputum study for tumor cells is a new procedure. Negative observations do not rule out malignant disease, but even an occasional positive result justifies the consideration of this examination.

Cytologic Studies: The whole field of cytologic diagnosis of cancer deserves comment. I wish to emphasize that the reading of smears is a problem for the specially trained cytologist. Inexperience may lead to disastrous results and a condemnation of the whole procedure. In many communities there are specially trained persons who examine these smears. In New Jersey the Society of Pathologists offers a diagnostic service to all physicians for indigent cases, with the aid of the American Cancer Society and the State Health Department. Other states must do likewise. One can be instructed in collecting material. In proper containers filled with a suitable preserving fluid, the smears may be sent to any distant laboratory for examination. It is best applicable, of course, to vaginal and cervical smears, but sputum, prostatic secretions and gastric washings properly fixed may be mailed to any distant laboratory.

In examining a patient for any cause it is well for one to keep cancer in mind. Recently a man of 40 was seen in our dispensary. He had lost weight and had a cough, and by roentgenologic examination of the chest an old tuberculous process was seen. He came to the dispensary because of enlarged cervical and axillary nodes which were discharging a watery, sometimes cheesy, material. There were no tubercle bacilli seen in direct smear. Biopsy revealed Hodgkin's disease. He is improving with nitrogen mustard therapy alone. A woman suffering from diabetes was in the hospital for insulin standardization. She had a coughing spell and spat up a little fresh blood. The curious intern looked in her pharynx with a mirror and discovered what later turned out to be a lymphosarcoma of the lingual tonsil. A dentist, consulted because of ulcerative gingivitis, noted the widespread character of the lesion and sent the patient to a laboratory for a blood cell count. The patient had acute leukemia in an early stage.

Rh Typing: It is advised that the Rh type be accurately determined for all patients for whom transfusion is contemplated. It is imperative that the Rh type of every female patient be considered before a transfusion is administered. A single Rh-positive transfusion in an Rh-negative female patient may sufficiently immunize her so that her first born will show the disastrous effect of erythroblastosis. It is fortunate that all Rh-negative persons are not good reactors and that probably in not more than 1 in 25 will Rh antibodies develop, but the test is so simple that one is not justified in jeopardizing a woman's first born by an improper blood transfusion. For the same reason, all pregnant women should have Rh tests and the Rh antibody titer should be determined in those who are Rh negative. If the physician is properly forewarned he may save the life of a baby that might otherwise die of erythroblastosis.

Contradictory Observations at Autopsy: Autopsy may prove that the clinical diagnosis was, no matter how well founded, incorrect. I examined a woman for a county physician. She was a farm woman who had gone out to feed her mule in the early morning. When she did not return to the house on time her family searched and found her in the stall with a gash in her forehead. Death was attributed to fracture of the skull caused by the kick of a mule. Autopsy showed that she had a ruptured dissecting aneurysm of the aorta. She was as good as dead when she fell. If the mule kicked her, it was little more than a tap, for there was no fracture, not even subperiosteal hemorrhage. In another instance a young woman had a criminal abortion performed and, with her friend, went to a resort hotel to recuperate. After an afternoon on the beach she went to bed. The next morning her friend awakened to find her dead. Autopsy revealed no evidence of septic endometritis, but fulminating cerebrospinal meningitis with extensive adrenal hemorrhage. In another instance, a man died suddenly in a rural area; the local county physician performed an autopsy and, finding white kidneys, suspected bichloride poisoning. He sent the kidneys to an expert in medicolegal pathology who found only leukemic infiltration. The man had never had the advantage of a blood cell count during life.

## CONCLUSION

Considerate use of the laboratory will increase diagnostic accuracy and may shorten the length of illness.

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**Tuberculosis in Persons Over Forty.**—There is a rather widespread clinical impression that pulmonary tuberculosis rarely makes its appearance after the age of thirty. For example, in the most recent edition of an outstanding textbook of medicine the following statement is found in the section on tuberculosis: "Those who have lived to the fourth decade without the appearance of a pulmonary lesion seldom develop the disease." Nevertheless, it is the impression of many phthisiologists that the first roentgenographic evidence of significant pulmonary tuberculosis after thirty, and even after forty, is not at all a rarity today. For instance, of the 344 cases of incipient pulmonary tuberculosis recently reported by Reisner, 17 developed after the age of forty. It was thought worth while, therefore, to report an additional 5 cases of incipient pulmonary tuberculosis in persons over forty years recently observed by the author. —Chaves, Aaron D., Incipient Pulmonary Tuberculosis in Persons Over Forty, *The American Review of Tuberculosis,* May 1949.

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# NONPARALYTIC POLIOMYELITIS AND MUMPS MENINGOENCEPHALITIS

## Differential Diagnosis

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The unequivocal diagnosis of nonparalytic poliomyelitis is difficult to achieve, since its signs and symptoms are often those associated with aseptic meningoencephalitis, and for this syndrome there may be a variety of causative agents. The most direct evidence of nonparalytic poliomyelitis which can be obtained at present consists in the isolation of the virus from the stools or pharyngeal secretions in suspected cases.[1] But the isolation of the agent from such sources cannot be regarded as entirely conclusive, and the procedures involved are intricate, time consuming and expensive. They cannot, therefore, be used as routine. The diagnosis, accordingly, is often made on epidemiologic data taken together with the clinical observations. Epidemiologic evidence, however, is intrinsically circumstantial and hence can be considered only as presumptive in character.

In contrast to the agent of poliomyelitis, the role of certain other viruses in aseptic meningoencephalitis may be established more easily by laboratory methods.[2] Of these the mumps virus is often encountered.[3] Since the development of the complement fixation test for the diagnosis of mumps infection, some other investigators [4] have obtained positive reactions for mumps with serums of patients who, on clinical and epidemiologic grounds, were regarded as having nonparalytic poliomyelitis. In view of these observations and the general considerations in respect to the varied causation of aseptic meningoencephalitis to which we have already referred, a number of cases occurring in the vicinity of Boston during July, August, September and October of 1948, with the diagnosis of nonparalytic poliomyelitis, have been studied by means of the complement fixation [2] and antihemagglutinin tests [6] for mumps. When results of these tests indicated that mumps virus was the cause of the infection, attempts were made to isolate it from the spinal fluid. The results and, for the purpose of comparison, epidemiologic data indicating the relative incidence of epidemic parotitis and paralytic poliomyelitis in the community during the period of study are presented in this communication.

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[1] Howe, H. A., in Rivers, T. M.: Viral and Rickettsial Infections of Man, Philadelphia, J. B. Lippincott Company, 1948, chap. 10, pp. 245-268.

[2] Francis, T., Jr.: Diagnostic Procedures for Virus and Rickettsial Diseases, New York, American Public Health Association, 1948.

[3] Kane, L. W., and Enders, J. F.: Immunity in Mumps: III. The Complement Fixation Test as an Aid in the Diagnosis of Mumps Meningoencephalitis, J. Exper. Med. **81**: 137-150, 1945.

[4] (*a*) Smadel, J.: Personal communication to the authors. (*b*) Hammon, W. M.: Personal communication to the authors. (*c*) Bass, M. H.: Recent Advances in Our Knowledge of the Contagious Diseases of Childhood, Bull. New York Acad. Med. **24**: 784-802, 1948.

[5] Deleted in proof.

[6] Robbins, F. C.; Kilham, L.; Levens, J. H., and Enders, J. F.: The Antihemagglutinin Test in the Diagnosis of Infections by the Mumps Virus, J. Immunol. **61**: 235, 1949.

### RESULTS OF SEROLOGIC TESTS FOR MUMPS INFECTION AND ATTEMPTS TO ISOLATE THE VIRUS

Mumps complement fixation and inhibition of hemagglutination (antihemagglutinin) tests were carried out on pairs of serum specimens in acute and convalescent stages derived from 17 patients whose illness was diagnosed by members of the hospital staff, either tentatively or finally, as nonparalytic poliomyelitis. Attempts to demonstrate mumps virus were made by inoculation of the spinal fluid into the amniotic sac of chick embryos. The slight modification of the technic employed in this procedure has been recently described.[6] From the results of the serologic tests which are summarized in table 1, it was concluded that in 6 of these 17 cases (cases 1 through 6) the virus of mumps was responsible for the disease. Thus, during the course of illness in all of them a significant increase in complement-fixing antibody (8 times or more) was demonstrated. Comparable increase in antihemagglutinins was also revealed. Confirmatory of the serologic observations was the demonstration of virus in specimens of the spinal fluid obtained from 3 of the patients. On the other hand, it is evident that the serologic tests on the pairs of serum in 10 of the remaining 11 cases failed to show any change during the course of the disease in the concentration of mumps antibody (cases 8 through 17). In case 7 acute phase serum was not available, but the low titers of the convalescent phase serum afford presumptive evidence that this patient had recently not been infected by the mumps virus. It would seem, therefore, that this agent was not involved in these 11 cases. This conclusion is likewise supported by our failure in 3 cases of paralytic poliomyelitis to demonstrate a change in the concentration of mumps antibody during the course of the disease and convalescence. Moreover, the spinal fluid obtained in 2 of these cases failed to produce mumps infection in chick embryos.

### CLINICAL OBSERVATIONS

No essential difference was observed between the clinical signs and symptoms presented by the two groups of patients. In none was enlargement of the salivary glands detected, although 1 patient among those with the diagnosis of mumps meningoencephalitis had orchitis five days after he was admitted to the hospital and 5 of this group gave a history of exposure to mumps parotitis three to four weeks before the onset of their illness. Lethargy, headache, nausea, vomiting and nuchal rigidity occurred in both groups. One of the patients, who had positive serologic reactions for mumps and subsequently visited a clinic for the aftercare of poliomyelitis, exhibited weakness of the anterior part of the neck and abdominal muscles. In none of the remaining 16 cases did definite muscle weakness develop. The mean duration of illness of the group with mumps meningoencephalitis was 8.5 days; that of the other group was 6.5 days.

### CHANGES IN THE CEREBROSPINAL FLUID

Leukocyte counts of the cerebrospinal fluid from the 6 patients with mumps meningoencephalitis all exceeded 200 per cubic millimeter, and the proportion of lymphocytes was at least 90 per cent. In 4 of them the total protein exceeded 40 mg. per hundred cubic centimeters. In contrast, in most cases in which the virus of mumps was not involved there were lower total protein concentrations and leukocyte counts. The observations in the 6 cases of mumps meningoencephalitis also were characteristic of a larger series which was recently studied.[7] But it must be understood that they are not always encountered in this disease, while occasionally in cases in which the condition is not caused by the mumps virus (case 16, table 1) the leukocyte count and total protein may be elevated to a degree comparable to that usually observed in mumps meningoencephalitis. It is, therefore, obviously impossible to make a conclusive etiologic diagnosis on the basis of changes in the cerebrospinal fluid. Such changes, however, may help the clinician in making a provisional diagnosis.

TABLE 1.—*Laboratory Data from Cases with Diagnosis of Nonparalytic Poliomyelitis*

| | | Cerebrospinal Fluid | | | Serologic Results | | | |
|---|---|---|---|---|---|---|---|---|
| Case No. | Age, Yr. | Protein Mg./100 Cc. | Leukocytes, per Cu. Mm. | Monocytes, Percentage | Blood Drawn After Onset, Days | Inhibition Hemagglutination * | Complement Fixation * | Virus Isolation |
| 1 | 10 | 21 | 371 | 100 | 3<br>20 | 1:4<br>1:64 | 1:512<br>1:4096 | 0 |
| 2 | 6½ | 48 | 530 | 95 | 2<br>14 | 1:128<br>1:128 | 1:16<br>1:256 | + |
| 3 | 5 11/12 | 152.4 | 1,810 | 98 | 2<br>23 | 1:32<br>1:256 | 1:32<br>1:2048 | + |
| 4 | 2 11/12<br>.. | 38.4<br>.. | 232<br>... | 100<br>... | 2<br>14 | 1:32<br>1:512 | 1:32<br>1:512 | 0 |
| 5 | 16 | 48.5 | 1,380 | 100 | 2<br>28 | 1:32<br>1:256 | 1:16<br>1:128 | 0 |
| 6 | 16 | 104.4 | 432 | 89 | 1<br>25 | 1:64<br>1:2048 | 1:16<br>1:128 | + |
| 7 | 21 | 21.8 | 34 | 93 | 71<br>92 | 1:32<br>1:64 | 1:8<br>1:4 | |
| 8 | 26 | 22.8 | 20 | ... | 7<br>42 | 1:64<br>1:64 | 1:4<br>1:4 | |
| 9 | 27 | 31.1 | 35 | 100 | 7<br>37 | 1:128<br>1:128 | 1:4<br>1:4 | |
| 10 | 13 | 38.4 | 45 | 95 | 5<br>40 | 1:32<br>1:64 | 1:16<br>1:16 | |
| 11 | 30 | 40 | 87 | 100 | 3<br>15 | <1:32<br><1:32 | <1:4<br><1:4 | |
| 12 | 8 | 10.8 | 18 | 100 | 7<br>49 | 1:128<br>1:128 | 1:16<br>1:16 | |
| 13 | 4 | 24.1 | 18 | 89 | 3<br>39 | 1:128<br>1:128 | 1:16<br>1:16 | |
| 14 | 13 | 23.1 | 363 | 80 | 6<br>22 | 1:128<br>1:128 | 1:4<br>1:4 | |
| 15 | 15 | 80.6 | 212 | 75 | 1<br>15 | 1:64<br>1:64 | 1:8<br>1:8 | |
| 16 | 34 | 130 | 478 | 100 | 11<br>27 | 1:32<br>1:64 | 1:16<br>1:16 | |
| 17 | 4 | 28.8 | 1,294 | 85 | 1<br>13 | 1:32<br>1:32 | 1:4<br>1:4 | |

* Figures denote the highest dilution of serum which inhibited virus agglutination or fixed complement.

### INCIDENCE OF NONPARALYTIC POLIOMYELITIS AND MUMPS PAROTITIS IN MASSACHUSETTS

In regard to the results of the laboratory tests described, it is relevant to compare the incidence of paralytic and nonparalytic poliomyelitis and of mumps

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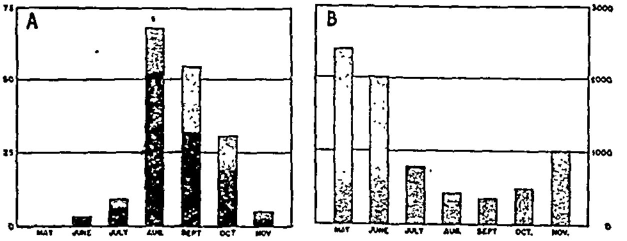
7. Kilham, L.: Isolation of Mumps Virus from the Blood of a Patient, Proc. Soc. Exper. Biol. & Med. 69: 99-100, 1948.

parotitis reported to the Department of Health of Massachusetts in recent years. Within the Commonwealth the reporting of cases diagnosed as nonparalytic poliomyelitis first became routine in 1935.[8] From that time until the end of 1945, the disease in approximately 33 per cent of all reported cases of poliomyelitis was, in an average year, designated as nonparalytic. Subsequently this proportion increased steadily to reach a maximum of 66 per cent in 1948. It is remarkable that the year 1948 was characterized by the lowest incidence of the paralytic form recorded in the last six years. This year has also been distinguished, as indicated in the figure, by an unusual incidence of mumps. Indeed, from June through November, the only period in which poliomyelitis was reported to any appreciable extent, the monthly incidence of mumps exceeded that for any comparable period since the reporting of the latter began in 1916. The disparity between the reported incidence of the two forms of poliomyelitis and the parallelism between the incidence of the nonparalytic type and mumps suggest that a significant number of the cases in which the diagnosis was given as poliomyelitis without paralysis might have been cases of mumps meningoencephalitis.



*A,* incidence of poliomyelitis, nonparalytic (black bar) and paralytic. *B,* incidence of mumps. (Massachusetts, 1948.) The vertical values show the number of cases.

Additional support for such an inference is offered by the difference between the age distribution in paralytic and nonparalytic cases. Horton and Rubenstein[9] noted that in Massachusetts nonparalytic poliomyelitis is reported most frequently in the age group 5-15 years, whereas the incidence of paralytic cases is highest among the age group 0-4 years (table 2). It would appear, therefore, that the age distribution of nonparalytic poliomyelitis is similar to that of mumps and not to that of the paralytic form.

## COMMENT

The serologic and virus isolation studies which have been summarized indicate that the disease in 6 of 17 hospitalized patients diagnosed clinically as nonparalytic poliomyelitis was actually infection with the mumps virus in which salivary gland involvement was not evident. Although the number of patients is small, these observations are sufficient to show that it is frequently impossible to identify the nature of the infectious agent in either of these conditions on clinical and epidemiologic criteria alone.

As yet no laboratory method for the routine diagnosis of nonparalytic poliomyelitis is available. On the other hand, procedures have recently been devised, consisting either in the demonstration of the development of specific antibodies or in the isolation of the agent during the course of the illness, whereby meningoencephalitis due to mumps can be usually differentiated. Since mumps meningoencephalitis without parotitis is by no means rare, it would seem that whenever possible the diagnosis of nonparalytic poliomyelitis should be withheld until laboratory tests for mumps meningoencephalitis have been carried out.

The results of such tests are most often positive in patients exposed to mumps who present signs and symptoms of meningeal irritation and who exhibit a high leukocyte count with a high proportion of mononuclear cells in the spinal fluid. But it should be emphasized that the serologic reactions may also indicate that the mumps virus is occasionally involved even when the leukocyte count is under 100 per cubic millimeter and when no definite history of exposure to mumps can be readily obtained.[3]

From the epidemiologic point of view, a diagnosis of nonparalytic poliomyelitis may be suggested if other members of the family or group concurrently have the paralytic form. Without a definite history of this sort, however, the mere occurrence of aseptic lymphocytic meningoencephalitis during the late summer and early fall, when poliomyelitis may be epidemic, is insufficient to warrant even a tentative diagnosis of the nonparalytic form of the disease. Thus, not only various types of mosquito-borne encephalitis may appear at times in certain areas, but also, as we have shown in this communication, cases of mumps meningoencephalitis may occur. With respect to the seasonal association of the latter with nonparalytic poliomyelitis, it is perhaps pertinent to point out that enlargement of the salivary glands may possibly develop less frequently in mumps infections during the summer months and that during this season the incidence of meningoencephalitis without parotitis may be relatively greater. Observations in support of this conjecture have been presented elsewhere.[7]

TABLE 2.—*Age Distribution of Poliomyelitis, Paralytic and Nonparalytic* *

| Age Group, Yr. | Paralytic | Nonparalytic | Total |
|---|---|---|---|
| 0-4 | 18 | 13 | 31 |
| 5-9 | 11 | 26 | 37 |
| 10-14 | 10 | 27 | 37 |
| 15-19 | 5 | 19 | 24 |
| 20+ | 15 | 29 | 44 |
| Total | 59 | 114 | 173 |

* Source: Division of Communicable Disease, Massachusetts Department of Public Health, 1948.

## SUMMARY

Among 17 hospitalized patients given the diagnosis of nonparalytic poliomyelitis, 6 appeared to have mumps meningoencephalitis, as indicated by the results of serologic tests. The virus was recovered from the spinal fluid of 3 of these patients. The unequivocal diagnosis of nonparalytic poliomyelitis is at present difficult or impossible to make on the basis of clinical, laboratory and epidemiologic observations.

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[8] Kilham, L.: Mumps Meningo-Encephalitis, With and Without Parotitis, Am. J. Dis. Child., to be published.

[9] Horton, R. J., and Rubenstein, A. D.: The Age Distribution of Poliomyelitis in Massachusetts, New England J. Med. **239:** 169-172, 1948.

# DIAGNOSTIC CLINIC FOR REHABILITATION

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With insufficient information and an inaccurate diagnosis a patient may start a program of rehabilitation totally unsuited to his handicap; hence the first major division in the organization of services for the rehabilitation of the handicapped is the diagnostic clinic. The physical qualities, mental characteristics and vocational abilities of the patient must be determined, recorded and evaluated before treatment is started. Then and then only can a rational plan leading to the restoration of this handicapped person to the best possible physical, economic and social status be formulated. The purpose of this paper is to present a few ideas on the organization and value of the diagnostic clinic for rehabilitation with several related thoughts on other problems of rehabilitation.

In the practice of curative medicine, if the physician is not certain of a diagnosis, the patient is sent to a clinic in which there are medical specialists with x-ray and laboratory facilities at their command for special examinations of the blood, urine, heart, chest, skeletal framework and the like. This is the medical diagnostic clinic, and it is here that a complete study of the physical and mental characteristics of the patient can be made. But in this clinic there is neither the personnel nor the facilities for determining the assets and capabilities of the patient for returning to work with a handicap and a need for social adjustment. The diagnostic clinic of rehabilitation does have such personnel and facilities in addition to those required to make a medical diagnosis. In this clinic for rehabilitation there must be determined such factors as the extent and character of the patient's work experience; his adaptabilities and aptitude for further education and work with his handicap; his physical achievements for daily living; the effect of his illness and inactivity on his mind, and his personality traits, which some say constitute the greatest single factor in the success or failure of rehabilitation. A careful appraisement should be made of his attitude toward a complete recovery and social adjustment and whether he has the will to do or an ability to make "the best of what he has left." It has been said that the normal person goes through life utilizing only about 15 per cent of his reserves and resources. The handicapped definitely learn quickly to draw on their reserves and resources. A person can live satisfactorily with one lung or one kidney, and he can live satisfactorily with half or less than half of normal muscle strength. By developing the remaining muscles or parts of muscles and learning how to substitute what he has left for what he had before, the patient can adapt himself to nearly all of the physical demands involved in independent living. These and many others are the traits and characteristics of the disabled man which must be ascertained in the rehabilitation diagnostic clinic.

It must be remembered that rehabilitation is an individualized process and will never lend itself to fixed and stereotyped programs. Each case represents a separate problem, which has to be studied and judged on its own merits; hence the need for an accurate diagnosis. Too much emphasis cannot be placed in the diagnostic study on a thorough and careful estimation of the emotional and mental qualities of the patient. It can be seen how unsuitable and oftentimes incorrect a plan of rehabilitation might be started on without a satisfactory understanding and evaluation of all of these factors, and how the diagnostic clinic represents the starting point and key to successful rehabilitation.

## DIVISIONS OF REHABILITATION DIAGNOSTIC CLINIC

The rehabilitation diagnostic clinic (chart) should have two divisions: the medical division, in which the extent and character of the disability will be determined and evaluated, and the achievement test division, in which the abilities of the handicapped for work and to meet the demands of daily living will be determined and evaluated. The director should be fully acquainted with all the problems of rehabilitation and may be either a physician or a layman.

*Medical Division.*—The medical division of the diagnostic clinic should have a physician as director, for a director with medical training is best qualified to interpret and evaluate the examinations, special studies and laboratory tests. There should be three branches of this division, namely: medical consultants, psychosocial and physical medicine. In the medical consultants branch there should be a consulting staff representing all medical and surgical specialties not included in the other two branches of the division and sufficient laboratory facilities for the determination of the more common laboratory tests. In the psychosocial branch there should be a psychiatrist who has a special interest in psychosomatic problems and a medical social worker who has had special training in psychiatry. The social worker who is trained to investigate the home conditions of the patient, his economic status and his relationship to his family, to his relatives, to his friends and to his business or working associates will render valuable assistance in the final appraisal of the case. In the physical medicine branch there should be a physiatrist, who is the physician trained in physical medicine, and a physical therapist, who has had special training in muscle examinations and determination of joint motion. A high percentage of patients in need of rehabilitation have orthopedic conditions. In 1940 there were estimated to be over 2,500,000 persons in the United States with orthopedic handicaps in need of rehabilitation, 13 per cent of whom were decidedly disabled. In all of these patients there is some involvement of muscles and joints which must be properly examined and their functional value estimated before

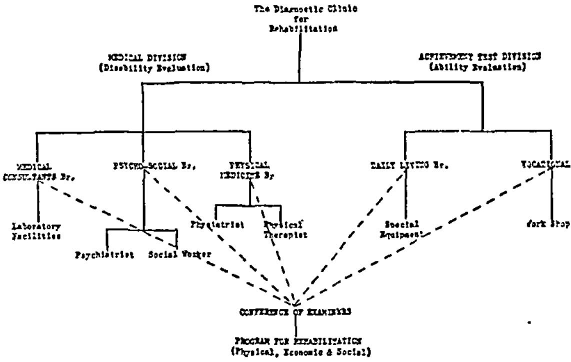

Chart showing organization of a rehabilitation diagnostic clinic.

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From the Alfred I. du Pont Institute of the Nemours Foundation.

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Dr. Howard A. Rusk and Dr. Donald A. Covalt of the New York University School of Medicine and Dr. A. J. Canning of the New York Rehabilitation Hospital, West Haverstraw, N. Y., assisted in the preparation of this article.

a sound program of rehabilitation can be decided on; hence the need for the special training of the physical therapist.

*Achievement Test Division.*—The achievement test division should be headed by a director who has had training and experience in vocational rehabilitation. There should be two branches, namely, daily living and vocational. In the daily living branch there should be determined what the patient can do with his disability in meeting the physical demands of daily life. The equipment in this branch must be especially selected and be such apparatus as is necessary for the ascertainment of this information. An accurate determination of these tests is most important for the severely handicapped. It has been estimated that there are thirty-seven basic skills involved in the achievement tests which must be mastered in order to cope with the commonplace activities of living, such as dressing, eating, washing and walking up and down stairs. These are not the specialized skills necessary for a vocation, but only those which have to be used in daily living. There have been seventy-two achievement tests for daily living described for the paraplegic patient,[1] activities which he should be able to carry out successfully every day. Without these observations a suitable program of rehabilitation cannot be planned, for first attention in all rehabilitation programs must be given to teaching the patient how to adequately take care of himself in daily life.

In the vocational branch, there should be determined the work capabilities of the patient as well as what his adaptabilities are for all types of work. One can do this only by observing the patient in a shop and seeing how he handles the tools to which he has been accustomed. If he cannot use these tools, a plan must be worked out for him to be taught to use the tools of the work he can perform with his handicap. The equipping of this branch must be carefully planned and should include all equipment necessary to execute the work of the more common vocations. In one of the large Army hospitals during the last war it was determined that there were fifteen primary vocational interests of the handicapped with a distinct preference for mechanical occupations. Kessler[2] stated, ". . . given a sound mind and ordinary intelligence there is no trade and vocation in which able bodied persons may engage that cannot be carried on by a physically handicapped person, if some consideration is made for his disability." This has been the experience in every rehabilitation clinic.

## PERSONNEL

In all programs of rehabilitation the instruction of the faculty, i. e., the teacher and the examiner, is paramount and should be one of the first steps in the establishment of both the diagnostic clinic as well as the therapeutic service. This faculty must be taught to observe carefully what the patient does, what the patient says and what his reactions are to various situations. They should be what have been termed "watchdogs of reality." There cannot be one fixed plan of training for the handicapped even though the handicaps may fall apparently into certain groups of physical disability. There must evolve from the diagnostic studies of every patient a clear understanding and appreciation of what he was before his handicap, what he is with his handicap and what he can be in the future. All patients who are handicapped have deep psychologic scars. The mental is always associated with the physical in injury and disease. The plan to heal the psychologic scar may be often more important than the plan to heal the physical scar. This plan must be formulated after very careful personality and emotional studies of the patient; it should include a program which will correct faulty personality traits, maintain good personality traits and stabilize the emotional state.

The personnel of the branches in both divisions of the diagnostic clinic should have a basic knowledge of the psychology involved in the evaluation and handling of the disabled. It cannot be emphasized too strongly that throughout all phases of rehabilitation everyone should be alerted to make note of the psychologic characteristics of the patient. Often it may be that the examiner who is determining an achievement test will pick up some remark or some attitude of the patient toward what he is doing which will be of utmost importance in the final evaluation of the case.

## INTEGRATION

When the reports of all of the examinations, studies, tests and observations in the two divisions have been made, there should be then a full discussion of these reports by those who have been the examiners. From these discussions should develop the final plan of rehabilitation for this particular patient. Before the final plan is decided on the vocational placement director should be consulted in order to determine the demand for different types of employment in the community. This demand should be taken into consideration before one renders a final decision on the type of vocational training to be given.

After the rehabilitation program of the patient, which includes vocational training, has been completed, he should be returned to the diagnostic clinic. His physical, mental and emotional characteristics should be reexamined and reevaluated. It is possible that during the period of rehabilitation many of these characteristics may have changed. Before job placement is a reality and he is "discharged to duty," if there are changes, particularly of the emotional state, these should be recognized and considered, in the final disposition of the case. From experience it is known that 10 to 25 per cent of those placed in employment by the vocational rehabilitation services do not continue on the jobs in which they were first placed. There must be an explanation for this, and it most likely is a change in the mental attitude during the period of rehabilitation. Once a handicapped person faces life as a paid professional worker, a definite barrier has been crossed. If he fails in his first job there will be an emotional reaction and a psychologic setback which will definitely make his future adjustment most difficult. With this second diagnostic survey these situations may be averted and the percentage of initial work failures among the handicapped will be decreased.

## COMMENT

A great deal of the planning and thought concerning rehabilitation is considered by many to be impractical, idealistic and to represent theory which will never work out in practice. David Livingston once said, "Out of the castles in the air come the cottages by the sea." Dreaming of ideal rehabilitation as represented by "the castles in the air" is what a great many of the workers in the field of rehabilitation may have experienced. Without dreams, however, it is certain that "the cottages by the sea," or many of the worth while attainments of life, would never be here today. But we want to be sure that we are still not in the dreaming or "the castles in the air" stage in our thinking. If we remain too long in this stage, many of our programs of rehabilitation may collapse. A balance between the visionary and the nonvisionary, the common sense workable point of view toward the situation, is what we wish to attain in our thinking. So often in the application of theory and ideals to situations dealing with patients, one completely forgets such things as what the patient thinks he himself can do, what he thinks his attainments and accomplishments can be with his disability. In planning a rehabilitation program these should always be given serious consideration. Rehabilitation or any other phase of medicine does not represent an exact science. Whenever there is an element of doubt, I strongly recommend that the physician or the rehabilitation worker lean toward the practical side, and, in this instance, it is the satisfying of the patient first in what he can or cannot do with his disability.

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[1] What's My Score, Veterans Administration Pamphlet 10-10, United States Veterans *Administration, Washington, D. C.,* 1946.

[2] Kessler, H. H.: Rehabilitation of the Physically Handicapped, New York, Columbia University Press, 1947, p. 30.

A word further about the importance of the patient's mental picture in the whole program of rehabilitation. This has been summed up well by Yost and Gilbreth.[3] "It's not the body, it's the man's mind which determines whether he is going to be a loafer a few years from now or not." They further state that the challenge for the handicapped man is ". . . to face that man deep within himself and find out if he wants economic independence. If the inner man is a shirker, he will shirk. But if deeper still, the inner man is a worker, he will work. If the inner man wants success in work, he will find within himself capacities such as he never realized he possessed. Like thousands who have preceded him, he may soon find that his handicap is becoming a spur he might never have found if life had been too easy." There is no doubt that if the mental wounds which have been inflicted by the physical handicap have caused the man deep within himself not to want economic independence, and have created a state of mental lethargy and despair, all attempts at rehabilitation may be futile. In any program for the handicapped from the beginning of injury or disease, especially for the disabled man who will require long term care, steps should be taken at once to prepare the man for his future and to do all that can be done, as Kessler[4] said, ". . . to immunize the patient against the virus of hospitalitis with its indolence, procrastination, and lack of ambition." If the program cannot prevent or bring him out of this state, rehabilitation will be a failure. The diagnostic clinic should help to identify these mental wounds and to determine whether the inner self in this patient really wants success. Destructive attitudes associated with physical disability may quickly take hold of the handicapped, often before either the patient or the physician realize what is happening. This is particularly true if the handicapped person feels that there is a prejudice in business and industry against him. On the other hand, the handicapped man with the proper attitude on the job who is dependable and prompt, who does not need to be told how to work and who is accurate and careful in all his work and tactful and diplomatic in conversation will succeed in spite of any disability and whatever prejudice his employer may have previously had toward disabled persons. Franklin Roosevelt has been for the past twenty years the great example of the disabled man who overcame his handicap because of great determination to overcome the defects of his disease. The answer definitely resides in the handicapped person. As it has been so aptly expressed, "It lies in his ability not in his disability." This will determine his future.

Medical knowledge is said to be at least fifty years ahead of its application. At present we possess a vast storehouse of information relating to the principles and technic of the rehabilitation of all types of handicapped persons. The basic thoughts on modern rehabilitation have been well known since World War I, but technics have changed, especially since the beginning of World War II. There is an immense job of education needed for the physicians and laiety before rehabilitation will be integrated into the everyday practice of medicine. A forward step has been made at the New York University School of Medicine in establishing a department of rehabilitation and physical medicine, where the intern, the resident and the graduate and undergraduate student are being taught the problems of handicapped persons and their solution. More physicians are beginning to realize that the best care of the patient is the total care, that the mental, the social and the vocational recovery is as important as the physical recovery and that this can best be obtained in the intelligently planned program of rehabilitation. Perhaps it can be said that we have experienced, from 1918 to 1948, thirty of the fifty years necessary for the application of this medical knowledge and, through international meetings such as this and the establishment of a department of rehabilitation in all of our medical schools as has been done at New York University, the span of the next twenty years may be shortened.

## CONCLUSION

It should be reemphasized that the starting point and key to all successful rehabilitation services is the diagnostic clinic. It must be appreciated that its scope is far larger than that of the medical diagnostic clinic which forms only one part of the diagnostic clinic for rehabilitation. But it must be remembered that rehabilitation is in its infancy and many changes will be made as this new specialty grows into adolescence and young adult life. Montaigne[5] said, "Arts and Sciences are not cast in a mould, but are formed and perfected by degrees, by often handling and polishing." This is what is taking place in rehabilitation today. It is being changed; it is being perfected by the frequent changing of technics which are found to be unsatisfactory and by the polishing of the good technics which are found to be satisfactory, and in the course of time there will evolve a service in medicine in which all will have confidence. Rehabilitation may now be in the same stage of development in which orthopedic surgery was in the second half of the last century, when Lewis A. Sayre[6] of New York, the first professor of orthopedic surgery in the United States, wrote, "At present orthopaedic surgery is but imperfectly understood amongst us and but few feel competent to practice it. It shall be our endeavor so to develop this department of surgery that no surgeon hereafter shall feel himself fairly educated in his profession until he has also mastered this particular branch." There is no doubt at present that rehabilitation is poorly understood. Few of us feel competent to practice it, and there is a vast job of education needed to bring the importance of the knowledge newly gained to the mind of the average physician. With greater experience, there will come a time when all physicians will feel a degree of confidence in what can be done for their patients with good rehabilitation and will not consider themselves educated until they know the technics and are masters of the practice of this "third phase of medicine."

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[3] Yost, E., and Gilbreth, L. E. M.: Normal Lives for the Disabled, New York, The Macmillan Company, 1944, p. 11.

[4] Kessler,[2] p. 95.

[5] Osgood, R. B.: The Evolution of Orthopaedic Surgery, St. Louis, C. V. Mosby Company, pp. 6 and 7.

[6] Osgood,[5] p. 58.

# PREVENTION OF GONORRHEA WITH PENICILLIN TABLETS

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It has been shown in a number of experimental infections[1] that the amount of penicillin necessary for cure increases with the number of organisms inoculated. Thus, in white mice infected with pneumococci, the single curative dose of aqueous penicillin G increased in one experiment from 5 to 260 mg. per kilogram of body weight as the inoculum was increased from 15 to 200,000 organisms.[1c]

Corollary to these observations, it was found that the longer the interval between inoculation and treatment, the more drug was required for cure. Presumably because of the interim multiplication of organisms, effectively bactericidal levels had to be provided for longer and longer aggregate periods in order to kill enough of the bacteria to effect cure. In syphilitic rabbits, the 50 per cent curative dose of penicillin (in oil and wax) 4 hours after intratesticular inoculation with 2,000 organisms was 1,420 units per kilogram of body weight; but by the second week it had increased to 13,600 units per kilogram, and by the sixth week to 59,000 units per kilogram.[1b] In rabbits infected with 2,000 beta hemolytic streptococci, the single curative dose of penicillin G increased progressively from 0.29 mg. per kilogram at the time of inoculation to 40 mg. per kilogram within 6 hours, and to more than 1,000 mg. per kilogram within 24 hours. Similar results were obtained in other experimental infections.[1c]

These large differences between the amounts of penicillin required to effect cure with young and old infections were so pronounced as to suggest that penicillin might be an effective agent for the prevention as well as the cure of bacterial infections.[1c] Specifically, since approximately 100,000 units of penicillin G given as a single injection in aqueous solution cures more than 90 per cent of established gonococcic infections, it seemed possible that as little as 5,000 to 10,000 units might suffice if the disease were treated early during the incubation period, a few hours after exposure; in such circumstances it seemed possible that a single tablet of penicillin taken by mouth might prove to be an effective abortive procedure.

The present study was therefore undertaken to study the efficacy of a single tablet of penicillin, taken by mouth, in the prevention of gonococcic infection. The subject population consisted of a group of male military personnel, varying in number from 200 to 400, with a high venereal disease rate and under reasonably close medical supervision. The subjects were at first divided into two groups. One group was given a single tablet of penicillin G as the men returned from shore leave, whether or not there had been exposure[2] and regardless of the interval which had elapsed since that exposure. The second group was given a tablet of similar appearance, but containing no penicillin. A generally successful attempt was made to have the penicillin taken at the time of issue and under observation. The subjects were at first not apprized of the purpose of the study, other than that it was designed to study methods of controlling "infections"; and no attempt was made either to change previous routine with respect to venereal disease prophylaxis or to determine what other prophylactic agents, if any, had been used. The men were further not informed that there were two types of tablets. The duration of shore leave varied from a minimum of 2 hours to a maximum of 22 hours. The mode was approximately 6 to 8 hours, the largest single group leaving the station between 4 and 8 p. m. and returning at 12 to 2 a. m. The time which had elapsed between possible exposure and the ingestion of penicillin was considerably less than the duration of the leave and is estimated to have averaged approximately 2 hours.

For reasons which are not germane to the present study, it was not possible to keep as close a control on leaves as is usually the case in a military installation. There is reason to believe that there were a large number of unrecorded liberties and that in some instances these were unauthorized. Further, and perhaps because of the limited information which they were given as to the purpose of the study, not all of the subjects were wholly cooperative in the first two experiments. Because it was difficult to maintain an adequate 24 hour supervision of the returning personnel, some of the subjects in the experimental group failed to take the penicillin prophylaxis, without appropriate record being made of that omission. The complications[1b] thereby introduced into the statistical evaluation are discussed in the fourth (§) footnote to table 1.

## RESULTS

Experiment 1. *Effect of 100,000 Unit Tablets of Penicillin on the Incidence of Gonorrhea.*—In the first sixteen weeks of the study, the men in the experimental group were given a single 100,000 unit tablet of peni-

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Opinions or conclusions contained in this report are those of the authors and are not to be construed as necessarily reflecting the views or the endorsement of the Navy Department.

Health, United States Public Health
Ser rch Division, Bureau of Medicine and
Sur ngton, D. C.
Solvents Corporation, Lederle Labora-
tori Chas. F. Pfizer, Schenley Laboratories
and The Upjohn Company supplied the penicillin tablets for this study and Sharpe & Dohme, Inc., the placebo.

Mr. Jerome Cornfield and Mr. Nathan Mantel of the Office of the Statistical Coordinator, Division of Public Health Methods, assisted in calculating rates and determining the significance of the observed differences.

[1] (*a*) Eagle, H., and others: Prevention of Gonorrhea with Penicillin Tablets, Pub. Health Rep. **63**: 1411-1415 (Oct. 29) 1948. (*b*) Eagle, H.; Magnuson, H. J., and Fleischman, R.: Relation of the Size of the Inoculum and the Age of the Infection to the Curative Dose of Penicillin in Experimental Syphilis, with Particular Reference to the Feasibility of Its Prophylactic Use, J. Exper. Med. **85**: *423-440 (April) 1947.* (*c*) Eagle, H.; Musselman, A. D., and Fleischman, R.: The Effect of Size of the Inoculum and the Age of the Infection on the Curative Dose of [illegible] to be published.

[2] It is estimated that in the particular study group there was sexual exposure in more than 50 per cent of all liberties.

cillin G as the prophylactic (or more correctly, abortive) procedure, administered as the men returned from shore leave. The results over that period are summarized in table 1.

In the control group receiving no penicillin, there were a total of 35 cases of gonorrhea over the sixteen week period. This is an incidence of 610 cases per thousand men per year, and 12.2 cases per thousand liberties. In addition, there were 6 cases in men supposed to have received penicillin after each liberty but who, for a variety of reasons, detailed in the second footnote of table 1, are known not to have taken the prophylaxis.

TABLE 1.—*Prevention of Gonorrhea with a Single Tablet of Penicillin Taken by Mouth (Results When Patients Were Divided into Two Equal Groups, One Receiving Penicillin and One Receiving a Placebo)*

| | Experiment 1 (16 Weeks) 100,000 Units | | Experiment 2 (8 Weeks) 250,000 Units | |
|---|---|---|---|---|
| | Control Group | Experimental Group, Receiving Penicillin | Control Group | Experimental Group, Receiving Penicillin |
| Number of subjects*...... | 176-195 | 151-213 | 137-217 | 87-141 |
| Number of liberties........ | 2,871 | 3,218 | 745 | 569 |
| Number of cases †......... | 35 | 5 | 8 | 1 (?) ‡ |
| Incidence of gonorrhea.... per 1,000 men per year § ¶ | 610 | 105 | 325 | ... |
| Incidence of gonorrhea.... per 1,000 liberties | 12.2 | 1.8 | 10.8 | ... |

* The figures in this row represent the variations in the total number of subjects in each group during single 4 week periods of the study. Men were included even though they may have been in the study or in the group for only a fraction of that period. This figure is therefore somewhat greater than the average number of subjects in the study. In consequence, the rates per thousand men per year given in the table are somewhat lower than was actually the case.

† These figures do not include a total of 9 cases of gonorrhea which developed in men supposed to have taken penicillin, but who are known definitely not to have taken the drug after the leave in which the infection was contracted, either because they refused, because the leave was unauthorized or because of the laxity of the watch in charge of dispensing tablets. These cases should obviously not be included in assessing the efficacy of the procedure. There must, however, have been many others in the experimental group, supposed to have taken the drug, who failed to do so and nevertheless escaped infection. The total of 5 failures charged to the experimental group receiving 100,000 units of penicillin includes 3 cases in which there was no record on the individual card that the penicillin had been taken, and which may therefore not have been penicillin failures. They have nevertheless been treated as failures in the calculations because there was no proof that the tablets had not been taken.

‡ This case developed in a subject 5 days after exposure, and after the supposed ingestion of a 250,000 unit tablet. The subject denied having received a pill, despite the entry on the record.

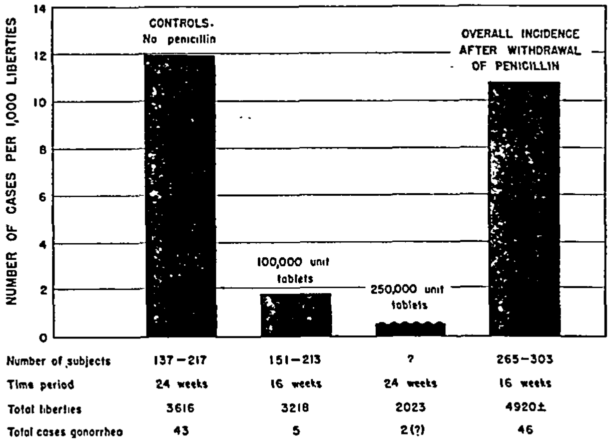
§ Some of the men supposed to receive penicillin actually failed to do so, and in calculating these rates an attempt has been made to correct for these omissions. If in a given month there were, for example, 10 cases in a control group of 200 men, with a total of 500 liberties, and if in the same period there were, for example, 1 case in the supposedly experimental group who failed to take penicillin, it is assumed in calculating the rates that 1/10 × 200 = 20 men in the experimental group had failed to take the drug, and that this had occurred in a total of 1/10 × 500 = 50 liberties. The values so calculated have been subtracted from the totals in the experimental group in calculating the rates per thousand men per year and per thousand liberties. The correction is obviously approximate only, but to exclude the cases developing in subjects who had failed to take penicillin without at the same time changing the base figure would result in rates biased in favor of the prophylactic procedure.

¶ Mr. Jerome Cornfield and Mr. Nathan Mantel, of the Office of the Statistical Coordinator, Division of Public Health Methods, assisted in calculating these rates and making the appropriate corrections.

In the experimental group, presumably receiving penicillin, there were 5 cases (105 per thousand men per year, and 1.8 cases per thousand liberties, third footnote of table 1). In 3 of these 5 failures, there was no entry on the card that the subject had received penicillin, and there is therefore reason to suspect that no drug was taken. These cases have, however, been included in the failures of table 1 and in the foregoing estimated rates.

The question may be raised as to whether the apparent efficacy of the procedure was due to the fact that the men received a tablet after each liberty and that the infection may therefore have been aborted not by a single tablet but by 3, 4 or even 5 such tablets taken in succession. However, in 46 per cent of the liberties in the experimental group, a minimum of 3 days elapsed before the next liberty, and in 34 per cent there was a minimum of 4 days. In the entire group, the average number of liberties was 1.1 per week, and the average interval between liberties was 6.3 days. In view of the fact that gonorrhea usually develops in 3 to 5 days,[3] it follows that on the average only 1 to 2 tablets would have been taken during the incubation period of the disease. It seemed clear that this amount of penicillin taken by mouth, usually within less than 4 hours after exposure, had materially reduced the incidence of gonorrhea.

EXPERIMENT 2. *Effect of 250,000 Unit Tablets of Penicillin on the Incidence of Gonorrhea.*—On the termination of this first experiment, the size of the tablet was increased to 250,000 units, the men remaining in the same two groups.[4] The incidence in the control group continued at a high level, 8 cases developing in an eight week period after 745 liberties (325 cases per thousand men per year, and 10.8 per thousand liberties). In addition, there were 3 cases in subjects supposed to have received penicillin, but who took unauthorized leave and did not receive penicillin after exposure. In the experimental group receiving penicillin, there was only 1 case in 569 liberties; this subject denied having received a tablet, despite the entry on his card.



Graphic depiction of the prevention of gonorrhea with peroral administration of penicillin.

The results obtained in the 24 weeks of these first two experiments are summarized in the left-hand portion of the figure, which shows graphically the influence of the 100,000 and 250,000 unit tablets on the incidence of gonorrhea. If one combines all the data, then the following results are obtained: (*a*) In the control group a total of 43 cases developed after 3,616 liberties, an incidence of 11.9 cases per thousand liberties, and 508 cases per thousand men per year. (*b*) In the experimental group receiving penicillin at a dosage of 100,000 units, there were 5 cases after 3,218 leaves (1.8 cases per thousand leaves, and 105 per thousand men per year). The probability that this difference between the control and experimental groups could occur by chance alone is less than one in a million.[5] (*c*) In the experimental group receiving 250,000 unit tablets, there was 1 questionable failure after 569 leaves.

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[3] Pelouze, P. S.: Gonorrhea in the Male and Female, ed. 3, Philadelphia, W. B. Saunders Company, 1939.

[4] Midway in this period, the total number of subjects in the station, and available for the study, was suddenly reduced from 361 to 224.

EXPERIMENT 3. *Results When 250,000 Unit Tablets of Penicillin Were Taken on a Voluntary Basis.*—In the light of the promising results obtained in these first two experiments, covering a 24 week period, an attempt was made to determine the degree to which gonorrhea could be controlled by peroral penicillin prophylaxis taken voluntarily. The men were now informed as to the purpose of the study, that they had hitherto received two types of tablets, only one of which was effective, and that although no attempt would be made to impose the administration of the tablets, they would be available as desired on return from leave.

In such a volunteer study, it is a reasonable presumption that most of those requesting penicillin after a shore leave had actually been exposed. By the same token, of those who did not request prophylaxis a large proportion either had not been exposed or had been exposed only to their regular sex partner. This voluntary selection clearly biased the data against the penicillin prophylaxis.

As is indicated in section B of table 2, there were a total of 14 cases of gonorrhea over the 16 weeks of this voluntary study. Thirteen of these cases occurred in subjects who had chosen not to take prophylaxis on returning from the leave in which the disease was contracted. This represents an incidence of 3.9 cases per thousand "unprotected" leaves. In the 1,454 leaves protected by penicillin there was only 1 case, and in this instance the subject was absent without leave for 5 days in the 7 day interval between the "protected" leave and the date the symptoms appeared, with several "unprotected" exposures during that interval.

TABLE 2.—*Prevention of Gonorrhea with Peroral Penicillin (Results When 250,000 Unit Tablets Were Made Available on a Voluntary Basis to All Requesting It After Exposure)*

| | A | B | | C |
|---|---|---|---|---|
| | Previous Experience Over 24 Week Period in Control Group Not Receiving Penicillin | Results During 16 Week Period of Voluntary Prophylaxis | | Results in Following 16 Weeks After Penicillin Was Withdrawn |
| Number of subjects | 137-217 | 331-339 | | 265-303 |
| Total number of liberties | 3,616 | 4,827 | | 4,920 ± * |
| | | Liberties not protected by prophylaxis † | Liberties protected by single 250,000 unit tablet ‡ | |
| Number of liberties | 3,616 | 3,373 | 1,454 | 4,920 ± |
| Number of cases of gonorrhea | 43 | 13 | 1 (?) § | 46 |
| Incidence: cases per 1,000 liberties | 11.9 | 3.9 | 1 | 10.7 ± |

* Based on average figure in the first 24 weeks of the study of 3.8 liberties per man per 4 weeks.

† These represent liberties at which (*a*) there had definitely been no exposure, (*b*) exposure had been marital partner only or (*c*) there had been extramarital exposure, but the subject had elected not to take the penicillin tablet.

‡ Since the men were at this time informed as to the purpose of the tablets, there had probably been exposure on essentially all the liberties after which penicillin was requested: one would therefore have expected an even higher rate in this group than in the unselected experience of the first row.

§ This questionable failure represents a man who had gonorrhea 7 days after receiving penicillin prophylaxis, but who had, in the meantime, been on unauthorized leave for 5 days, with repeated exposures.

EXPERIMENT 4. *Results When Penicillin Was Withdrawn.*—After this 16 week period of voluntary prophylaxis, the penicillin tablets were withdrawn. As shown in the right-hand portion of the figure, the rates promptly returned to their "normal," prestudy level. Over the following 16 weeks, during which the station complement varied from 265 to 303 men, there were a total of 46 cases of gonorrhea. This represented an incidence of 525 cases per thousand men per year, and an estimated[6] *incidence of 10.7 cases per thousand* liberties, essentially the same as that observed during the controlled experiment in the men who received a placebo instead of penicillin. It seemed clear that the opportunity for infection had not changed materially during the period covered by the penicillin experiment and that the reduced incidence in those taking the drug (figure) could with some assurance be ascribed to the penicillin and not to some extraneous factor.

## COMMENT

1. *Efficacy.*—The foregoing data, graphically summarized in the figure, indicate that the ingestion of a single 100,000 to 250,000 unit tablet of penicillin may constitute a simple method for prevention of gonorrhea, one which can be used effectively for a number of hours after exposure and which does not have some of the undesirable features which attend the use of local prophylaxis. Under the conditions of the present study, the 100,000 unit tablet caused an 85 per cent reduction in the incidence of gonorrhea (5 cases in 3,218 liberties, as compared with 43 in 3,616 unprotected liberties) and the 250,000 unit tablet was more than 90 per cent effective (2 questionable cases in a total of 2,023 liberties).

The maximum period after exposure for which penicillin at those dosage levels could be relied on to abort gonococcic infection remains to be determined. The organisms multiply so rapidly and the incubation period of the disease is so short, that those doses may remain effective only if taken within 2, 4 or 6 hours, after which larger or multiple doses may become necessary. This is clearly indicated by the study of Campbell, Dougherty and Curtis,[7] who found in a second group of men that a single 200,000 unit tablet of penicillin taken on average of 14 hours after exposure caused approximately a 58 per cent reduction in the incidence of gonorrhea.

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[5] A total of 43 infections were observed after 3,616 liberties in the control group, and 5 infections after 3,011 liberties in the experimental group (corrected as indicated in fourth [§] footnote of table 1 for those who failed to take prophylaxis). If the rate per thousand liberties was the same among the controls and the experimental group, the expected number of infections would have been 26 among the controls and 22 among the experimental subjects instead of 43 and 5, respectively. The chi square test indicates that a difference of this magnitude or greater between the expected and actual number of infections could have occurred by chance less than one time in a million. Even if the infections where prophylaxis is known not to have been taken are included as failures in the experimental group, the difference between the experimental and control groups is still highly significant. So computed, there were 14 infections in 3,787 liberties in the experimental group, and 43 infections in 3,616 control liberties. Were there no difference in the rates in the two groups, the expected values would have been 28 and 29, respectively. A difference between the actual and expected values of this magnitude or greater could have occurred by chance alone about once in thirty thousand times.

[6] Assuming that the number of liberties per man remained at the level of 3 per week, the average of the preceding 40 weeks of the study.

[7] Campbell, V. W. H.; Dougherty, W. J., and Curtis, C. E.: Delayed Administration of Oral Penicillin as Prophylaxis for Gonorrhea, read before the Annual Scientific Session of American Venereal Disease Association, Washington, D. C., April 8, 1949.

The degree to which this generally uncooperative group of subjects accepted penicillin "prophylaxis" and the demonstrated efficacy of the procedure indicate its possible feasibility for the control of gonorrhea in the military forces. Were the penicillin tablets generally available, there is no reason to doubt that it would be as effective also for those in the civilian population who elected to use it.

2. *Complications.*—There are at least four complications which might attend the repeated peroral use of penicillin for the prevention of gonorrhea. In this study, admittedly small in scope and limited as to the number and type of personnel, we have seen no evidence that any of these complications occurs with such frequency as to contraindicate the peroral use of penicillin for the prevention of gonorrhea.

(*a*) There was no evidence of sensitization to the drug, or any other toxic manifestation, when 100,000 unit tablets were taken by an average of approximately 150 men over a period of 16 weeks at an average frequency of 1.1 times weekly, and when approximately 85 of these subjects continued with 250,000 unit tablets over an additional period of 24 weeks at approximately the same frequency. It is to be noted that there were many persons in this group who averaged more than 3 tablets weekly over those entire periods, without evidence of sensitization.

There is, however, good reason to believe that the ingestion of 250,000 unit tablets as often as daily over a period of weeks would in some cases cause sensitization to the drug. One such case was observed in the course of the present study in a group of 7 persons who received daily doses of 250,000 units over a period of weeks in order to follow the effect of such regular daily intake on the bacterial flora of the mouth and intestine.[8] The proportion of persons so affected, the severity and duration of the complication and the permanence of the sensitization are perhaps of lesser importance in relation to the prevention of gonorrhea (in which the penicillin would be taken only intermittently) than they are in relation to the possible use of penicillin for the prevention of other infections (cf. section 3).

(*b*) All the subjects in whom gonorrhea developed were cured with the administration of penicillin in therapeutic doses. There has been no indication of penicillin-fast strains of gonococci developing in consequence of the intermittent ingestion of penicillin tablets by men repeatedly exposed to infection.

(*c*) There has as yet been no demonstrated instance of the suppression or retardation of syphilitic infection caused by the intermittent intake of penicillin tablets. Four cases of syphilis were discovered in the subject population in the course of this study, all detected by serologic test, and without history of a chancre or rash. However, of these 4 cases, 2 were in control subjects who had received no penicillin. The third subject did not have a serologic test when he first reported to the station (April 27, 1948), remained at the station for only a month and was discovered to have a positive serologic reaction four months later. There is thus reason to suspect either the presence of latent syphilis at the time of his arrival or that he contracted syphilis in the interval between May 28 and September 23. The last subject was seronegative Jan. 26, 1948, and was discovered to have a positive reaction on April 16. Although nominally in the experimental group during this period, he had consistently refused penicillin, had had gonorrhea twice and received only a single tablet of penicillin in the entire three month period.

(*d*) The effect of the intermittent ingestion of a single 250,000 unit tablet of penicillin on the flora of the mouth and intestine remains to be determined.[8]

3. *General Considerations.*—The results here reported in the prevention of gonococcic infection bear out the general thesis [1c] that infections suscepible to treatment with penicillin may be successfully aborted during the incubation period by relatively small doses of penicillin. Thus, it may be possible to terminate epidemic outbreaks of such infections by the daily peroral administration of penicillin over a limited period of time to the entire susceptible and exposed population.

The early use of penicillin has been successfully applied to the prevention of syphilis.[9] In the contacts of cases known early and infectious disease, a single injection of 600,000 units of penicillin in oil and wax, administered weeks after the original exposure but before the development of serologic or clinical evidence of infection, decidedly reduced the proportion who subsequently had syphilitic infection. It is a reasonable expectation that procaine-penicillin in oil (with aluminum monostearate) would be even more effective, particularly if administered within a few days after exposure.

## SUMMARY

A single tablet of penicillin, taken by mouth as the men returned from shore leave, and within an average of 2 hours after possible exposure, materially reduced the incidence of gonorrhea in a group of military personnel.

1. In a control group of 176 to 195 men receiving a placebo tablet which contained no penicillin, there were 43 cases over a period of 24 weeks in a total of 3,616 liberties (508 cases per thousand men per year, and 11.9 per thousand liberties).

2. In the experimental group, consisting of 151 to 213 men who received a single 100,000 unit tablet, there were 5 cases in 3,218 liberties (1.8 per thousand liberties, and 105 per thousand men per year). In 3 of these 5 cases there was reason to doubt that the penicillin had been received.

3. When the size of the tablet was subsequently increased to 250,000 units, there was 1 questionable case over an 8 week period in an experimental group of 87 to 141 men with 569 liberties. When the penicillin was then made available to the entire station on a voluntary basis, so that it was taken only by those who had actually been exposed, there was again 1 questionable case in 1,454 liberties followed by penicillin prophylaxis. From the previous control experience one would have anticipated at least 20 cases in these 2 groups of 2,023 liberties.

4. In the dosages and under the conditions here used there were no toxic complications to the intermittent ingestion of single penicillin tablets, no clearcut instance of suppressed syphilitic infection and no indication of the development of penicillin-fast strains of gonococci.

The implications of these observations with respect to the prophylactic use of penicillin in other infections are discussed in the text.

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[8] Although strains highly susceptible to penicillin disappeared with this regimen, there was no emergence of new, resistant strains (Romansky, M. J.: Personal communication to the authors).

[9] Eisenberg, H.; Plotke, F.; Laughlin, M. E., and Baker, A. H.: Penicillin in the Prophylactic Treatment of Syphilis, read before the Annual Scientific Session of American Venereal Disease Association, Washington, D. C., April 8, 1949.

# HEADACHE ASSOCIATED WITH PATHOLOGIC CHANGES IN CERVICAL PART OF SPINE

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Headache is a symptom suffered at some time by almost 100 per cent of mankind and is the presenting complaint of a high percentage of patients seeking help from a physician. As knowledge of the multitudinous factors involved in the production of headaches has become more extensive the physician has been enabled to furnish more relief for the symptoms. Fortunately most headaches are infrequent and transient and respond to rest or simple analgesics. The more frequent and protracted headaches offer a challenge to the diagnostic and therapeutic ability of the physician, but too frequently relief for the patient is not obtained. Doctors have little knowledge of the actual mechanism of the production of headache, and most thinking in the matter is based on relatively few experimental or pathologic observations and a multiplicity of deductions, some of which are contradictory.

Within the past fifteen or so years the greatest amount of interest has evolved in the various headaches thought to be caused by vascular disturbances in or about the cranium. The works of Penfield,[1] Pickering,[2] McNaughton[3] and Wolff[4] and their co-workers have established the areas of cranial sensitivity as being principally the extracranial arteries of the scalp, the arteries of the meninges and the large venous sinuses and the meningeal structures closely adjacent to these vessels. In addition, these investigators have demonstrated that pain produced in the head anterior to a vertical line bisecting the ears superficially and on or above the tentorium cerebrii is transmitted through the fifth cranial nerve; pain posterior to the ears and below the tentorium cerebrii is carried by the ninth and tenth cranial and the upper three cervical nerves. This explanation fails to account for certain headache phenomena, particularly with the headaches associated with pathologic changes in the cervical part of the spine.

The purpose of this communication is to describe a group of cases in which headaches were associated with a symptom complex and physical observations of a similar nature and the common factor of the roentgenographic demonstration of the loss of the normal lordotic curvature of the cervical part of the spine. Some simple historical points and physical signs will be discussed. It will be shown that demonstrable arthritis of the cervical part of the spine is not necessarily present. This symptom complex is not a new one, but it is one which I am sure is frequently overlooked. Too often the patient is sent off on a round of investigations of eyes, sinuses and teeth, and then all too often the diagnosis is neuralgia, atypical migraine, chronic sinusitis, constipation or psychoneurosis.

## REPORTS IN THE LITERATURE

Pathologic change in the cervical region as a cause of headaches has been the subject of medical writings for many years. Telling[5] in 1911 referred to rheumatic or indurative headache and related it to "fibrositis" in the posterior cervical region. Patrick[6] in 1918 gave a good clinical description of headache which, originating in the cervical region, radiated upward and to the frontal regions. He did not believe that the headache was related to fibrositic nodules in the neck, but rather to focal infection, and noted exacerbations in relation to exertion, rotation of neck and coughing. Gunther and Kerr[7] in 1929 described 8 cases of headache, principally occipital in location but at times with temporal radiation, among 30 cases of arthritis of the spine with what they called a "radicular syndrome." Bisgard[8] in 1932 reported 31 patients with roentgenographically demonstrable arthritis of the cervical part of the spine who had occipital headaches, who obtained some relief by supporting the head with the hand, by lying down or with heat. In 1937 Holbrook[9] presented a plea for more consideration of arthritis of the first three cervical vertebrae as a cause of headache. The type of headache he described was principally occipital in location, but at times there was temporofrontal radiation, was often protracted for months, although variable in degree, and was associated with roentgenologic evidence of hypertrophic arthritis of the upper cervical part of the spine. He used heat and massage and immobilization of the neck but found therapy rather unsatisfactory. Hartsock[10] in 1942, in describing prolonged headache due to cervical arthritis, said that the symptom complex is characteristic, with pain beginning in cervical muscles radiating upward to occiput and forward to temporal regions. In 1942 Kelly[11] reported on a group of 40 patients with headache of various causes, "indurative," "fibrositic," "post-traumatic" and "postmeningeal," who had both occipital and frontal localization temporarily relieved by injections of procaine hydrochloride into localized areas in suboccipital regions. None of these authors except Kelly related the headaches described to trauma. In 1944 Jones and Brown[12] related the headache of "post-traumatic head syndrome" to some type of pathologic change in the upper cervical part of the spine but did not present roentgenologic evidence. These latter two authors used injections of procaine hydrochloride in the upper cervical region with some relief of symptoms. Davis[13] in 1945, in a study of injuries of the cervical part of the spine, pointed out that symptoms, which may include headache, might develop from relatively minor trauma. Such symptoms may appear only after months or years, and the original injury may be overlooked in the patient's casual memory. After a roentgenographic study of a series of normal and post-traumatic cervical spines, he stated that the loss of the normal convexity of the cervical part of the spine always indicates post-traumatic derangement of the posterior intervertebral joints. This change is not generally recognized, and he stated that he did not recognize this abnormality prior to 1936. This loss of the normal curvature of the cervical part of the spine without roentgenographic evidence of generalized arthritis has been pointed out by those authors[14] interested in ruptured disks of the lower cervical region. Little[15] in 1946 reported his experiences in the management of a group of patients with chronic or recurrent headaches who had had various diagnoses, such as, postconcussion syndrome, atypical trigeminal neuralgia, migraine and hysteria, and a high percentage of whom showed roentgenographically a loss of the normal cervical lordosis. He described 3 such patients, only 1 of whom had any known history of trauma. He tried various therapeutic measures and found that head traction, though not highly successful, produced more relief than other measures. Crutchfield[16] used traction with tongs fixed in the skull in a group of cases in which the diagnosis was what is considered occipital neuralgia. No changes in alinement of the cervical part of the spine were noted in his cases, but the results, as far as relief of occipital pain was concerned, were encouraging.

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[1] (a) Penfield, W.: Intracerebral Vascular Nerves, Arch. Neurol & Psychiat. **27**: 30 (Jan.) 1932; (b) Contribution to Mechanism of Intracranial Pain, A. Research Nerv. & Ment Dis., Proc. **15**: 399, 1935.

[2] Pickering, G. W.: Observations on the Mechanism of Headache Produced by Histamine, Clin. Sc. **1**: 77, 1933.

[3] McNaughton, F. L.: The Innervation of the Intracranial Blood Vessels and Dural Sinuses, A. Research Nerv. & Ment. Dis., Proc. (1937) **18**: 178, 1938.

[4] Wolff, H. G.: Mechanisms of Headache, Arch. Neurol. & Psychiat. **50**: 224 (Aug.) 1943.

[5] Telling, W. H. M.: "Nodular" Fibromyositis, an Everyday Affection, and Its Identity with So-Called Muscular Rheumatism, Lancet **1**: 154, 1911.

[6] Patrick, H. T.: Indurative or Rheumatic Headache, J. A. M. A. **71**: 82 (July 13) 1918.

[7] Gunther, L., and Kerr, W. J.: The Radicular Syndrome in Hypertrophic Osteo-Arthritis of the Spine: Analysis of Thirty Cases, Arch. Int. Med. **43**: 212 (Feb.) 1929.

[8] Bisgard, J. D.: Arthritis of the Cervical Spine: Some Neurologic Manifestations, J. A. M. A. **98**: 1961 (June 4) 1932.

[9] Holbrook, C. S.: Headache Due to Arthritis of Cervical Spine, South M. J. **20**: 225, 1927.

[10] Hartsock, C. L.: Headache from Arthritis of the Cervical Spine, M. Clin. North America **24**: 329, 1940.

[11] Kelly, M.: Headaches, Traumatic and Rheumatic: The Cervical Somatic Lesion, M. J. Australia **2**: 479, 1942.

[12] Jones, O. W., Jr., and Brown, H. A.: The Treatment of Post-Traumatic Head Pain, J. Nerv. & Ment. Dis. **99**: 668, 1944.

[13] Davis, A. G.: Injuries of the Cervical Spine, J. A. M. A. **127**: 149 (Jan. 2) 1945; Correction **127**: 936 (April 7) 1945.

## CLINICAL EXPERIENCE

In the past two years a group of 20 patients with the presenting symptom of headache of a particular variety were seen in my practice. Although not presenting a clearcut symptom complex, the history and physical observations presented many features of a similar nature and the roentgenogram was always characteristic. A history of trauma was usually not obtained except on direct and insistent questioning and often was of such slight degree, or so far in the past, that the patient was not impressed with its relationship to headache. There was usually, but not always, a history of attacks of soreness and stiffness or "cricks" in the neck either preceding or in association with the headaches. The headaches were frequent, almost daily, and usually prolonged and recurrent for weeks or years. Most often beginning in the occipital region with radiation to the frontal or supraorbital region, the headaches were steady and varied from a mild ache to intense pain. The frontal pain was unilateral or bilateral. At times the frontal headache was so predominant that only after direct questioning was any painful symptom referred to the occipital region or the neck. Position of the head and neck appeared to be a definite factor. Headache frequently had its onset while the patient was in bed and in early morning. The position of the head at work, any exertion which placed a strain on the neck and driving a car were often precipitating factors. In some cases the head was held in an obviously abnormal manner, but this was never extreme. Manipulation of the neck usually revealed some resistance to extreme lateral motion, but there was no obvious spasm of the superficial musculature. In practically all cases, firm pressure with the examiner's thumb just lateral to the body of the second cervical vertebra produced pain locally and also a radiating pain which was described as shooting through the head to the frontal or supraorbital region. When the symptoms of headache were bifrontal this phenomenon could often be produced on both sides. Such pressure would almost always reproduce the frontal headache complained of, but it would not be protracted. If the patient was suffering from headaches during the course of the examination, traction simply with the examiner's hands on the head in an upward direction almost always produced temporary relief. Nausea of slight degree was present only if the headache was particularly severe. There was no vomiting. A roentgenogram of the cervical part of the spine in each case invariably revealed an abnormal loss of normal lordotic curvature. In most instances roentgen exposures were made in three lateral positions: (1) head held comfortably erect with the eyes fixed on a spot level with the eyes, (2) in extreme flexion and (3) in extreme extension. The roentgenograms of the normally erect position furnished the easiest demonstrable features. In only 2 cases was evidence of hypertrophic arthritis seen, and this was not of extensive degree.

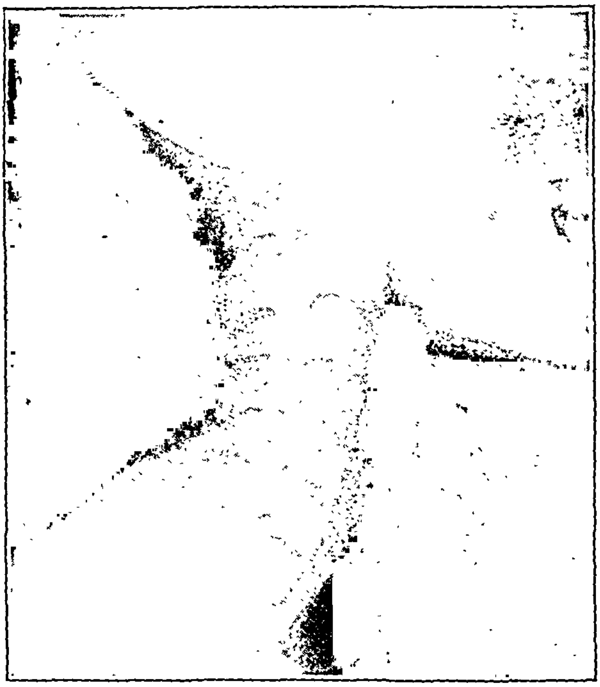
Fig. 1.—Lateral roentgenogram of a normal cervical part of the spine demonstrating the smooth lordotic curvature.

All of the patients described underwent a complete general physical investigation with routine examinations of urine and blood. Special examinations for the usually common causes of headache were carried out where there was any indication. A number of the patients had refractive errors but were wearing suitable lenses, so that eye strain was not considered a factor. None had sinus disease. Hypertension and renal disease were absent in all cases. The psychic element was evaluated in all cases and not considered to be a factor. An allergic diathesis was present in 2 cases but had been controlled by diet and antihistamine drugs prior to the onset of the severe headache in 1 case and could not be considered a factor in either. All cases have been followed long enough to rule out presumably the presence of an intracranial neoplasm. Of the 20, 6 illustrative cases are briefly reported. They were chosen from the group to demonstrate the main features of the syndrome and the variables seen in symptoms, physical and roentgenographic observations and response to therapy.

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[14] Semmes, R. E., and Murphey, F.: The Syndrome of Unilateral Rupture of the Sixth Cervical Intravertebral Disk, with Compression of the Seventh Cervical Nerve Root: Report of Four Cases with Symptoms Simulating Coronary Disease, J. A. M. A. **121:** 1209 (April 10) 1943. Spurling, R. G., and Scoville, W. B.: Lateral Rupture of the Cervical Intervertebral Disks, Surg., Gynec. & Obst. **78:** 350, 1944. Josey, A. I., and Murphey, F.: Ruptured Intervertebral Disk Simulating Angina Pectoris, J. A. M. A. **131:** 581 (June 15) 1946.

[15] Little, S. C.: Headaches Associated with Injuries of the Cervical Spine, J. M. Alabama **16:** 110, 1946.

[16] Crutchfield, W. J.: Personal communication to the author.

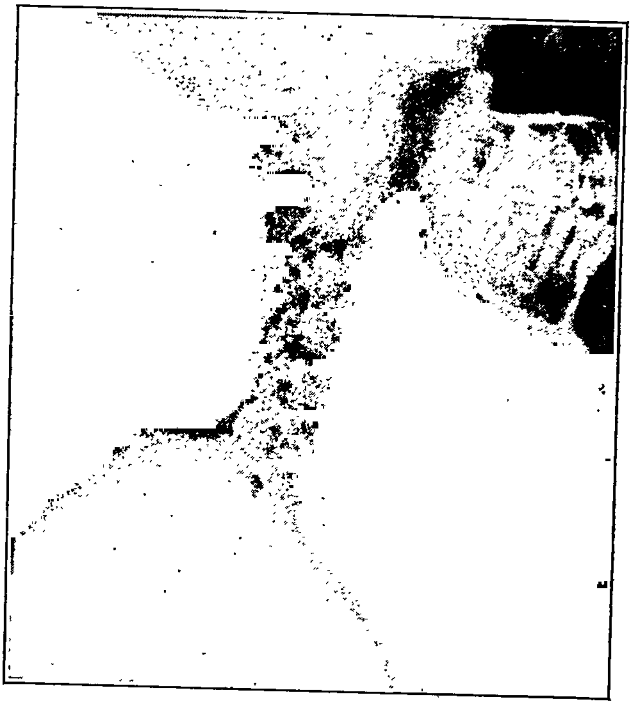

Fig. 2. (case 1).—Lateral roentgenogram of the cervical part of the spine taken on April 25, 1947, demonstrating straightening of the entire cervical part of the spine.

## REPORT OF CASES

Case 1.—E. D., a woman aged 40, while attempting to enter a slowly moving car, was thrown to the floor of the car on April 5, 1947. She did not appear to be injured at the time and had no specific complaints. One week later an aching pain developed in the posterior cervical region and a sharp pain in the right supraorbital area. There was limitation of extreme motions of the neck. Pressure of the thumb to the right of the second cervical body produced, in addition to local discomfort, a sharp supraorbital pain similar to the spontaneous headache. A roentgenogram of the cervical part of the spine on April 25 showed a loss of normal lordotic curve with a straight alinement from the first to the seventh cervical segment. The cervical and supraorbital pain persisted unremittingly for three weeks, during which time she received local physical therapy and wore a cervical collar constantly. There was some improvement after this, but headaches would reappear after she lay down at night and also on any excess exertion. Driving an automobile, with the necessary frequent movements of the head, would always produce an aching sensation in the neck and the right supraorbital headache. These symptoms were frequent for about three months and necessitated the use of a cervical collar at intervals. During this period the patient would frequently awaken at night with headache and would apply the cervical collar for relief. Gradually the aching in the neck and headaches became less frequent, but even eighteen months after the original injury the exertion of lifting any heavy object or driving an automobile in traffic would be followed by the same symptoms, which could be controlled by administration of an analgesic. A lateral roentgenogram of the cervical part of the spine on Sept. 14, 1948, showed some improvement in comparison with the original roentgenogram in that there was a slight curvature seen, but far from the normal lordotic curvature.

Case 2.—J. C., a man aged 49, seen on May 3, 1948, had suffered with attacks of headache for an undetermined number of years. The greatest discomfort was a dull to sharp ache across the frontal region, with more localization over the left eye and with some radiation to the left occipital region. These headaches appeared at irregular intervals of one to three months and would persist for two to fourteen days. There was no particular time of day for their appearance, but when present they were constant. He was unable to determine any specific precipitating factor, but excess exertion was thought to be contributory. He sought an explanation from many physicians, but he was led to believe that his headaches were caused by constipation or sinusitis. Only after close search of his past history was it disclosed that he had received a head injury in 1918 and had been unconscious for eight hours. He also had fallen out of a tree at the age of 10 years. Examination showed no real limitation of movements of the neck. Pressure just to the left of the second cervical body produced slight but definite radiation of pain through the head to the left supraorbital region. During an attack of headache the application of head halter traction for a few minutes gave prompt temporary relief of the head pain. A roentgenogram of the cervical part of the spine showed an abnormally straight alinement from the first to the seventh cervical segment without any evidence of arthritic changes. He was instructed to use head halter traction at home three or four times a day for fifteen minute periods. After three weeks he did not suffer any further headaches. He was then instructed to use traction at the onset of any headache. When last interviewed, on October 15, he stated that he had had only occasional mild headache in the frontal region, occurring sometimes at night and again when he was fatigued. Coughing and sneezing also would cause some frontal pain. In general he had shown remarkable improvement and had not had to use traction for several months.

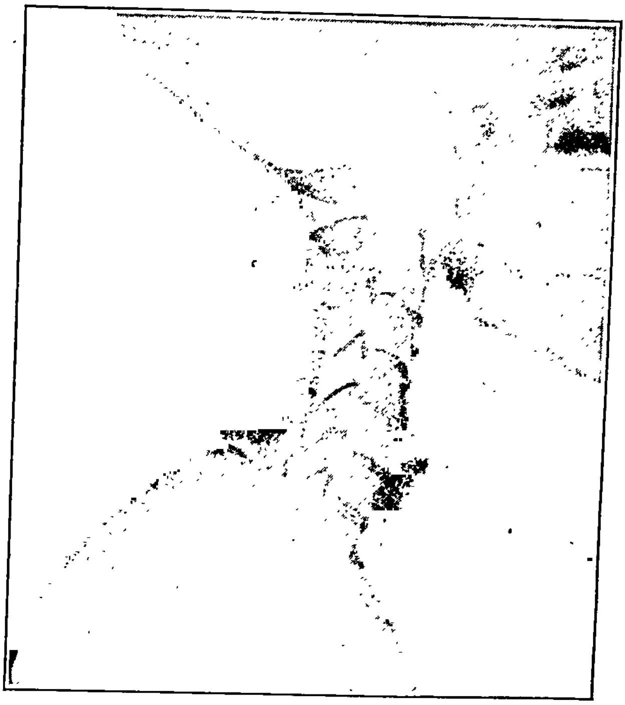

Fig. 3. (case 1).—Lateral roentgenogram taken Sept. 14, 1948 showing slight return of posterior curvature, but the second through the fifth cervical bodies have a straight alinement.

CASE 3.—Y. W. H., a male draftsman, seen Nov. 1, 1946, had frequent headaches as far back as he could remember. Pain was bifrontal, beginning over either eye and spreading at times radiating to the occipital region. Attacks would occur almost daily for several months with some periods of remission for several weeks. Usually onset of the headache would be early in the morning with some relief after arising and use of analgesics, but the onset at times would follow physical exertion or driving a car for long periods of time. In addition, he had suffered with attacks of "cricks" in the neck for a number of years, not necessarily related to headaches. There was limitation of right lateral motion of the neck. Pressure to the right of the second cervical body produced sharp right supraorbital pain which seemed to radiate through the head. A roentgenogram on November 1 disclosed a loss of the normal curvature with slight anterior angulation at the fourth cervical segment. He was instructed to use head halter traction for twenty minutes twice daily and to sleep without a pillow. This gave some relief of symptoms for a time, particularly the neck pains, but the symptoms of headache persisted with little abatement. Various drugs were tried, including nicotinic acid, ergotamine tartrate (gynergen®) and tripelennamine hydrochloride (pyribenzamine® hydrochloride). None of these had any effect. He obtained some relief with acetylsalicylic acid with occasionally some codeine. Although the headaches were discomforting they were not incapacitating, and he did not wish to try any further or more drastic therapeutic measures. A roentgenogram of the cervical part of the spine on Sept. 15, 1948, showed no change from the original roentgenogram.

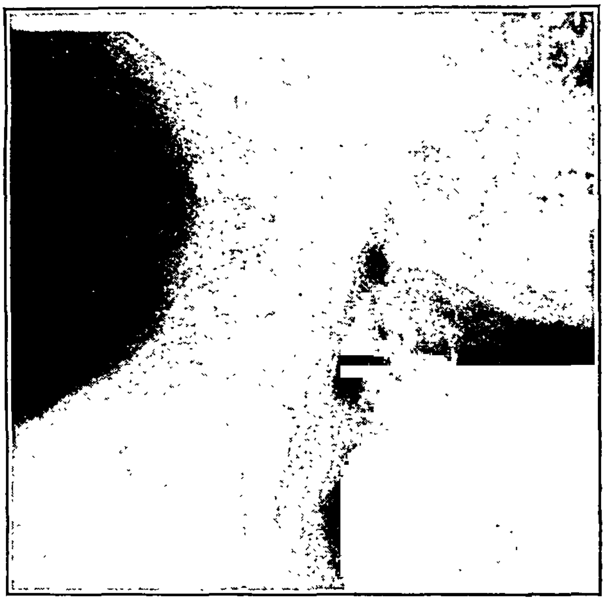

Fig. 4. (case 2).—Lateral roentgenogram showing straightening of the bodies of the entire cervical portion of the spine.

CASE 4.—A. C., a woman aged 38 years, a typist, was first seen Dec. 15, 1947. At 6 a. m., December 13, severe throbbing pain occurred in the right occipital region, which disappeared in half an hour. About 1 p. m. the same day severe pain developed in the right occipital area which radiated to the right parietal and then through to the right supraorbital region, lasting two hours. Again on December 14, about 8 a. m., severe right occipital and right frontal pain appeared in association with aching in the right upper cervical region which persisted to the time of reporting to my office the next day. She admitted to an injury to her coccyx at the age of 13, but only after close questioning was the history of a recent fall elicited. On December 6 she fell a short distance on stone steps, striking her chin. She was dazed for a few minutes but had no other immediate complaints. In addition, she had had infrequent attacks of "stiff neck" for about ten years. There was no limitation of motion of the neck. Firm pressure just to the right of the second cervical body produced a sharp pain in the right frontal region. A roentgenogram revealed a fusion of the fifth and sixth cervical bodies, thought to be congenital, and a straightening of the bodies of the first through the sixth cervical vertebrae. Traction applied in the office gave temporary relief of the headaches. She was instructed to use head halter traction at home for fifteen minutes three times daily and to wear a cervical collar at night. She obtained considerable relief from these measures, and the persistent headache disappeared after sixteen days. The headaches occurred at frequent intervals for the next ten weeks, and there was considerable increase associated with coughing and sneez-

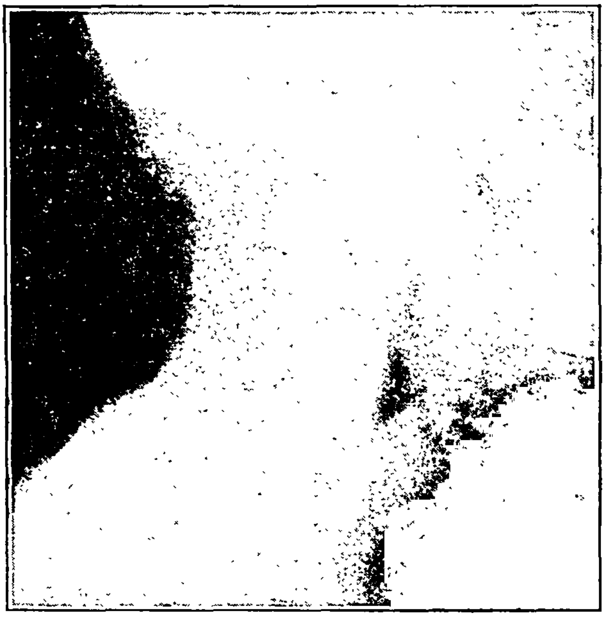

Fig. 5. (case 3).—Lateral roentgenogram taken Sept. 15, 1948. There is total loss of lordotic curvature.

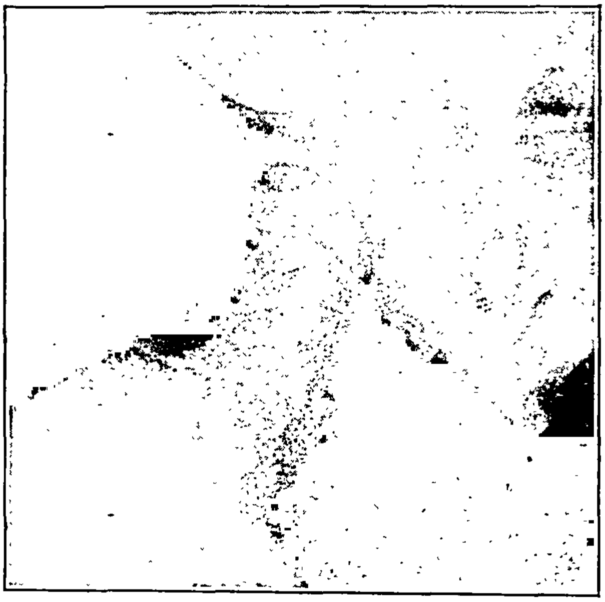

Fig. 6. (case 5).—Lateral roentgenogram taken Sept. 15, 1948, showing loss of normal curvature from the first through the fourth cervical segments. Slight arthritic changes are present.

ing during an attack of coryza during the week of Jan. 14-21, 1948. Up to the time of reporting, Oct. 15, 1948, she occasionally had a moderate headache if she was overfatigued or following prolonged work at a desk with her head flexed. This headache responded to rest and administration of an analgesic. A roentgenogram taken September 27 showed a slight, but far from normal, lordotic curvature of the cervical part of the spine.

Case 5.—H. H., a housewife aged 50, had had headaches almost daily for over twenty-five years. Pain was in the upper, posterior cervical, occipital and bifrontal regions. Occurring on her awakening in the morning, they were usually less noticeable after she became active, but were always made worse with excess physical exertion. At rare intervals there had been some pains in the right shoulder region and right upper arm. She had sought relief from many physicians. In addition, she had had hay fever for many years, but with some relief by the attention of an allergist in the previous several years, without any effect on the course of the headache. At age 5, she had fallen from a second story window and was unconscious for several hours. She was first examined May 9, 1946. The neck was held rather stiffly, and there was definite limitation of flexion. Pressure laterally to the left of the second and third cervical bodies produced occipital and left frontal headache. A roentgenogram showed loss of normal curvature from the first to the fourth cervical segments, and slight arthritic changes were seen. Traction with a head halter was followed by temporary relief of the headache. Use of the head halter at home failed to prevent the daily headaches, and she reverted to the use of the analgesics she had previously used. She continued to have almost daily headaches, and prolonged rest was the only measure which produced any effective relief. A roentgenogram on Sept. 17, 1948, showed no change from the first roentgenogram.

Case 6.—B. H., a male executive, aged 52, seen July 9, 1947, first experienced an aching pain in the left occipital and suboccipital region on July 7, which had been moderate but persistent. At 3:30 a. m., on July 9, he awakened with a severe sharp pain in the left temporofrontal region which lasted about forty-five minutes. Again, about 11:00 a. m., the same symptoms returned and were rather severe when he coughed or turned his head. There was no known injury to the head or neck in the recent or remote past. There was limitation of extreme movements of the neck in all planes. Pressure just left lateral to the second cervical body caused sharp left frontal pain. A roentgenogram taken on July 9, 1948, showed straightening of the entire cervical part of the spine with slight anterior angulations at the fifth body. He was given acetylsalicylic acid and codeine and asked to use the cervical collar at night. After three weeks the headache and neck pain was almost completely relieved and he had suffered only slight return at infrequent intervals. In spite of the abatement of symptoms, a roentgenogram taken September 4 showed no demonstrable change.

## COMMENT

The principal characteristics of this group of patients are occipital pain and frontal pain, frequently related to position of the head and exertion which places a strain on the neck. The headaches may be primarily occipital or frontal, may be unilateral or bilateral. In almost all cases there is associated aching in the posterior cervical region or a history of attacks of "cricks" in the neck. The symptoms are most often intermittent or protracted over months or years, but may be rather transient, as in case 6. Most often a history of trauma to the head or neck could be obtained, but this was either of such mild nature or so far in the past as to be overlooked and not related by the patient to the headaches. Frequently the component of frontal pain could be reproduced by pressure lateral to the second cervical vertebral body. The one common factor in all cases was the roentgenographic finding of a loss of normal cervical lordotic curvature. Demonstrable arthritic changes were seen in only 2 of the cases, and, as this process was observed in the lower cervical region, it was not thought to be contributory to the symptoms. It is of interest to note that 2 patients (cases 1 and 4) showed slight but definite changes in the roentgenogram, with a tendency to return of the normal lordotic curvature after a period during which there was symptomatic improvement. One patient (case 6), whose symptoms were of only short duration, inexplicably showed no change in the alinement of the cervical bodies after fourteen months. The 2 patients whose symptoms were of longest duration (cases 3 and 5), and whose symptoms did not change, showed no demonstrable roentgenographic changes after two and a half and two years, respectively.

The exact nature of the anatomic or physiologic pathologic change cannot be definitely stated. From what is known of the innervation of the fore part of the head and the structures within the cranium above the tentorium by the fifth cranial nerve and the posterior aspect of the head and the subtentorial intracranial structures by the upper three cervical and the ninth and tenth cranial nerves, it is difficult to explain the transmission of the headache through these pathways. It is well known that the sensory nucleus of the fifth cranial nerve extends down the spinal cord to the level of the third cervical segment, but there are no known synapses with the upper cervical sensory nerves. It is difficult satisfactorily to conceive any direct connection of the nucleus playing a direct part in the pain involved in these cases, but such may be possible. Wolff and his co-workers[17] noted transient pain in the neck after prolonged headache from various causes, but that type of mechanism hardly seems likely in this group of cases. Inman and Saunders[18] produced deep and widespread pain in various parts of the human body by various irritants in muscles, fascia and ligaments and described it as "scleratomal distribution." Campbell and Parsons[19] produced pain in the paraorbital area of human beings by injecting a little 6 per cent sodium chloride solution into the occipitoatlantal periarticular tissues, and both occipital and frontal pain by similar injection into the periarticular tissues of the second cervical region. These authors also wrote of "scleratomal distribution" and noted the painful areas to be closely related philogenetically and physiologically. Hadley[20] stated that the normal curvature of the cervical portion of the spine is maintained in the absence of trauma even when arthritis is present, and Davis,[13] as previously noted, called attention to the relationship of trauma to the straight cervical portion of the spine. One is left with the deduction that trauma producing an injury in the nature of a sprain to the paravertebral ligamentous structures is the primary factor in the type of headache described, further evidencing itself in an abnormally straightening of the entire cervical portion of the spine due to reflex

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[17] Simons, D. J.; Day, E.; Goodell, H., and Wolff, H. G.: Experimental Studies on Headache: Muscles of the Scalp and Neck as Sources of Pain, A. Research Nerv. & Ment. Dis., Proc. (1942) **23:** 228, 1943.

[18] Inman, V. T., and Saunders, J. B.: Referred Pain from Skeletal Structures, J. Nerv. & Ment. Dis. **99:** 660, 1944.

[19] Campbell, D. G., and Parsons, C. M.: Referred Head Pain and Its Concomitants, J. Nerv. & Ment. Dis. **99:** 544, 1944.

[20] Hadley, L. A.: Roentgenographic Studies of the Cervical Spine, *Am. J. Roentgenol.* **52:** 173, 1944.

muscle spasm. Arthritis may be a factor late in the condition, but its presence is not necessary for the production of the symptom complex. Most probably the location of the injury is in the upper cervical region, in the first two or three segments, and it is not thought to be a disk lesion, as rupture of the intervertebral disks at this level has not been described. Such may be the case, however. Shoulder pain, arm pain and paresthesia of the arms and fingers were not usually observed in these cases, so that it is assumed that the lesion is not a ruptured disk of the lower cervical region, although the roentgenologic observations are somewhat similar to those of rupture of a lower cervical disk. It differs in that in ruptured cervical disks of the lower cervical region the straightening of the spine is predominantly in that area, while in the cases presented the straightening was either of the entire cervical portion of the spine or in the upper portion.

Treatment in all of these cases has not been exhaustively applied. Some of the patients had learned to put up with their symptoms, or had obtained some measure of relief from self-prescribed analgesics and added rest. When the symptoms were particularly severe, lying supine with a pillow under the shoulders, the use of a cervical collar bandage or head halter traction produced temporary, and in some cases semipermanent, relief. In cases 2 and 4, in which symptoms were rather severe, the use of head traction was definitely followed by satisfactory improvement. In 4 of the cases the symptoms subsided to the point where practically no therapy was needed. In 2 cases the therapy applied failed to effect any change. Ergotamine tartrate, nicotinic acid and antihistaminic drugs were used in 1 case with protracted symptoms without relief. Procaine hydrochloride injections about the bodies of the upper cervical portion of the spine was not attempted except in 1 case, and no permanent relief was obtained.

### SUMMARY

A group of patients is reported with frontal and occipital headaches, usually aching in the neck and always with a loss of the normal lordotic curvature of the cervical portion of the spine as seen roentgenographically. The cause of this headache is in all probability an injury in the nature of a sprain to the upper cervical part of the spine. The transmission of the pain to the frontal region is probably mediated through a "scleratomal" distribution or may in some way be related to the cervical portion of the nucleus of the fifth cranial nerve. Treatment is mainly directed toward simple immobilization of the head and head traction.

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**Brain Surgery.**—The brain has been called the Mount Everest of surgeons, and it is not surprising, therefore, that surgeons did not tackle brain tumours until 1880, when the surgery of most other parts of the body was well under way. The most important pioneer work in brain surgery was done by two men in Britain, William Macewen, of Glasgow, and Victor Horsley, of London. After thirty years of hard work on the part of these and other workers the mortality from operations for brain tumour was still 50%. In the next fifteen years, and especially after the first world war, largely owing to the work of Cushing in America, the mortality was reduced to 15%; and now it is down to 10% and should go lower.—Sir Hugh Cairns, Nuffield Professor of Surgery, Oxford; *The Australian and New Zealand Journal of Surgery,* July 1948.

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## *Special Article*

## TREATMENT OF PARAPLEGIA RESULTING FROM TRAUMA TO THE SPINAL CORD

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The essentials in the care of the patient suffering from a paralysis of the legs resulting from injury to the spinal cord consist of the prompt application of the following points:

1. Rotation or flexion of the spine should be studiously avoided or the spinal cord may be severed.
2. The deformity of the spine should be promptly reduced by traction or hyperextension or both.
3. The patient must be turned every two hours at least.
4. Proper care of the bladder includes:
    (*a*) Avoidance of distention or continuous contraction.
    (*b*) Encouragement of the development of an automatic bladder.
    (*c*) Avoidance of urinary sepsis, or prompt treatment if it occurs.
    (*d*) Prevention of urinary calculi by exercising upper extremities in bed and by early ambulation.
5. Proper care of the skin
    (*a*) Avoid prolonged pressure; turn frequently.
    (*b*) The bed should be clean, dry, smooth and flat.
    (*c*) Maintain adequate protein intake.
    (*d*) Large decubitus ulcers should be repaired surgically.
6. Care of the bowels
    (*a*) Relieve intestinal distention and constipation promptly, with:
        (1) Pituitrin or neostigmine.
        (2) Enemas and rectal tube.
    (*b*) Watch for and remove fecal impactions promptly.
    (*c*) Develop proper bowel habits.
7. Watch for, prevent and, if necessary, promptly treat anemia, hypoproteinemia and vitamin deficiencies.
8. Constantly be on the alert for complicating emotional reactions and help the patient to accept the reality of his difficulty.

The bases on which the treatment prescribed have been established are not necessarily original. In many instances the course outlined merely represents one of several which have been advocated, but the one preferred by the committee. The genesis of what is considered to be the ideal method of treatment could easily be followed, in a temporal sense, over the course of several years during which more than 720 paraplegic patients were under my care. No phase of the entire program failed to reflect my opinions, but the frequency with which the superior knowledge of others swayed my opinions needs little emphasis.

It might be well to reiterate the "Munro doctrine,"[1] a profession of faith that may be unjustified in an

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Wit[illegible] l of the Medical Advisory Committee of the [illegible] on.

[1] ([illegible] Lumbosacral Cord Injuries: A Study of Fort [illegible] . 1055-1063 (Aug. 14) 1943; (*b*) The Treatment of Patients with Injuries of the Spinal Cord and Cauda Equina Preliminary to Making Them Ambulatory, Clinics **4:** 448-474 (Aug.) 1945; (*c*) The Rehabilitation of Patients Totally Paralyzed Below the Waist with Special Reference to Making Them Ambulatory and Capable of Earning Their Living: I. Anterior Rhizotomy for Spastic Paraplegia, New England J. Med. **233:** 453-461 (Oct. 18) 1945; (*d*) The Rehabilitation of Patients Totally Paralyzed Below the Waist, with Special Reference to Making Them Ambulatory and Capable of Earning Their Own Living: II. Control of Urination, ibid. **234:** 207-216 (Feb. 14) 1946; (*e*) Cervical-Cord Injuries: Study of One Hundred and One Cases, ibid. **229:** 919-933 (Dec. 16) 1943. (*f*) Munro, D., and Hahn, J.: Tidal Drainage of Urinary Bladder: Preliminary Report of This Method [illegible] to "Cord Bladders" with Description of [illegible] (Feb. 7) 1935; (*g*) The Rehabilitation [illegible] Below the Waist, with Special Reference [illegible] and Capable of Earning Their Living: II [illegible] and Bladder Training, ibid. **236:** 223-235 [illegible] 1947; (*h*) Rehabilitation of Veterans Paralyzed as the Result of Injury to the Spinal Cord and Cauda Equina, Am. J. Surg. **75:** 3-18 (Jan.) 1948.

absolute sense, but certainly cannot be assailed as a goal toward which to strive. It states, "If he has been properly treated, every patient with a spinal-cord or cauda equina injury who is intelligent and cooperative and has the use of the shoulder, arm, and hand muscles can be made ambulatory; can have such control of the bladder and bowels as to sleep through the night without either getting up or wetting himself; can carry out ordinary activities throughout the day without soiling himself with feces or having to evacuate his bladder oftener than once every three hours; can lead a normal social life, and within the limits of his intellectual capacity, can earn a satisfactory living." [1c] No such goal was imagined in the early phases of experience, but as general medical knowledge was given specific application, it became obvious that some such goal was attainable. For this reason, the later papers of Munro [1c, d] served to cement these beliefs.

For reference, the writings of many neurologists, neurosurgeons, and urologists may be consulted.[2] That many of the methods prescribed are still the subject of bitter controversy cannot be denied. Wherever such differences exist, reference will be made to pertinent papers.

### TRANSPORTATION

Patients with injury to the cervical spinal cord (quadriplegia) should be transported face up [3] or face down.[1e] The arguments for transportation in the face-down position include the avoidance of oral intake of fluids during transportation and the elimination of possible aspiration of vomitus. These factors appear to be less important than other considerations in the uncomplicated case. Thus, it seems apparent that transportation in the face-up position is more favorable, for it produces less strain on an already embarrassed respiration. Furthermore, the distress of the patient is lessened considerably, traction can be applied more easily and measures aimed at prevention of turning of the head are more advantageously applicable. It seems somewhat useless to argue the merits of these systems, since it is all too frequently obvious that the initial attendants to the injured person are almost invariably uninformed. Were an informed person in attendance, he would in all likelihood regulate the position for transportation by the availability of help, the vehicular accommodations and the condition of the patient. It is likely that the average patient is best handled in the face-up position, with all precautions being taken to prevent flexion and rotation of the head with respect to the rest of the body. In the face-down position, it is difficult to insure a proper airway without turning the head to the side—obviously a contraindicated measure. A rolled garment in the nape of the neck or beneath the shoulders will insure extension. Traction on the head from the chin or heavy rolls at each side of the head will prevent rotation. Ambulances could carry a brace described by Dingman.[4] This sectional brace is easily applied with a minimum of moving and offers safety in transportation of the patient by providing both immobilization and traction at the same time. Should an effort be made to correct obvious deformities at the place where the injury has occurred before the patient is transported? Certainly closed manipulations in the face of embarrassment of the cervical cord are hazardous under the best of conditions, and the likelihood of aggravation of the effects of the injury is enhanced by such procedures. On the other hand, the structures in the cervical region are mobile and subject to easy manipulation.[2b] Again, it is often found that the initial attendants will have already manipulated the head. Laymen often speak of cases in which manipulation appears to have resulted in life saving. The informed attendant would probably do no more than apply steady traction to the head, awaiting roentgenographic demonstration of the bony lesion.

For injury to the vertebral column in the thoracic region, transportation in the face-down position is accepted almost universally. The injury in this region usually occurs after a sharp flexion insult, and extension tends to reduce or minimize the deformity. Traction is of little use because of the splinting of the thoracic spine by the chest.

Transportation in the face-down position is likewise accepted for the patient with injury to the lumbar vertebral bodies or to the lumbar cord for the same reasons previously cited. Here, however, traction to the legs may be of some benefit.

### ROUTINE ON ADMISSION TO THE HOSPITAL

Injury to the spinal cord should be considered a surgical emergency. As such, certain principles must be held in mind. First, the patient should not be moved any more than is absolutely necessary. Second, if surgical procedures are indicated, there is no basis for one's considering a patient as requiring routine care on admission and emergency care several days later. The term "spinal shock" has been the subject of misinterpretation and is actually a misnomer.[5] Barring other injuries that result in surgical shock, the patient with acute injury to the spinal cord suffers no disability other than loss of all voluntary and reflex activities below the point of his lesion. A lowered blood pressure is usual, but this alone does not justify the diagnosis of surgical shock.[6] It is possible that operative intervention will be helpful in the early hours,[7] provided that such intervention is indicated; otherwise, one can await the results of conservative treatment.

The first step on admission is physical examination of the patient on the stretcher. Presuming that the only lesion suffered has been to the spinal cord and its surrounding structures, a neurologic examination should be made. Actually, one need not be a skilled neurologist to determine the site of injury to the spinal cord. A pin, the finger nail or any sharp object drawn from the legs upward will show the level of the sensory loss produced by the lesion. The testing should not be carried out from above downward, as the level thus demonstrated is apt to be inaccurate. Figure 1 demonstrates the relationships between the spinal cord, the dermatome levels as projected on the skin and some familiar body landmarks. Anesthetic levels between the nipple line (fourth dorsal) and the inguinal ligaments (first lumbar) offer little difficulty of determination. It is only in the arms and the legs that confusion arises for the neophyte. As seen in figure 1, even these areas offer none too great an obstacle. A more complete examination would include testing of such functions as position sense and vibratory sense (dorsal columns), touch and localization (anterior spinothalamic tracts) and pain, hot, and cold (anterolateral spinothalamic tracts) as well as all movements and reflexes.

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[2] (a) Munro.[1] (b) Oldberg, E.: The Neurosurgical Considerations of Fracture of the Spine, S. Clin. North America **16:** 291-302 (Feb.) 1936. (c) Fay, T.: Surgical Management of Spinal Cord Trauma and the Neurogenic Bladder, Pennsylvania M. J. **46:** 221-227 (Dec.) 1942. (d) Convalescent Care and Rehabilitation of Patients with Spinal Cord Injuries, War Department Technical Bulletin (TB med. 162), May 1945. (e) Head, H., and Riddoch, G.: The Automatic Bladder, Excessive Sweating and Some Other Reflex Conditions in Gross Injuries of the Spinal Cord, Brain **40:** 188-263 (Nov.) 1917. (f) Lewis, L. G.: Treatment of the Neurogenic Bladder After Acute Spinal Injury, S. Clin. North America **23:** 1505-1525 (Dec.) 1943.

[3] (a) American Red Cross First Aid Text-Book, Philadelphia, The Blakiston Company, 1940. (b) Neurosurgery and Thoracic Surgery, Military Surgical Manuals, Philadelphia, W. B. Saunders Company, 1943, vol. 6. (c) Pilcher, C.: Injuries of the Spinal Cord and Cauda Equina, South. Surgeon **11:** 755-764 (Nov.) 1942.

[4] Dingman, P. V. C.: A Splint for Cervical Fractures and Dislocations, J. Bone & Joint Surg. **25:** 473-476 (April) 1943.

[5] Fulton, J. F., and McCouch, G. P.: The Relation of the Motor Area of Primates to the Hyporeflexia ("Spinal Shock") of Spinal Transection, J. Nerv. & Ment. Dis. **86:** 125-146 (Aug.) 1937.

[6] Wiggers, H. C.; Glaser, G. H.; Canavarro, K. de S., and Treat, A. E.: Arterial and Central Venous Pressure Following Complete Transection of the Spinal Cord, Am. J. Physiol. **139:** 217-224 (June) 1943.

[7] (a) Allen, A. R.: Remarks on the Histopathological Changes in the Spinal Cord Due to Impact: An Experimental Study, J. Nerv. & Ment. Dis. **41:** 141-147 (March) 1914. (b) Semmes, R. E.: Spinal Cord Surgery, Memphis M. J. (Aug. 16) 1929.

When one has established the probable site of the lesion in the spinal cord, this particular region of the cord is related to the surrounding bony architecture. In general, the lower the lesion is in the spinal cord or spinal nerves, the greater is the discrepancy between the dermatome and vertebral levels. The probable site of the bony lesion is then used as the centering point for roentgenograms of the vertebral column. Verification is sometimes obtained by the presence of an actual deformity of the back that can be detected by palpation. Anteroposterior and lateral roentgenograms are usually sufficient, although oblique roentgenograms may often be desirable. These should be taken on the original admission stretcher, if possible, and without appreciable movement of the patient. It is highly desirable that the responsible physician be in attendance throughout.

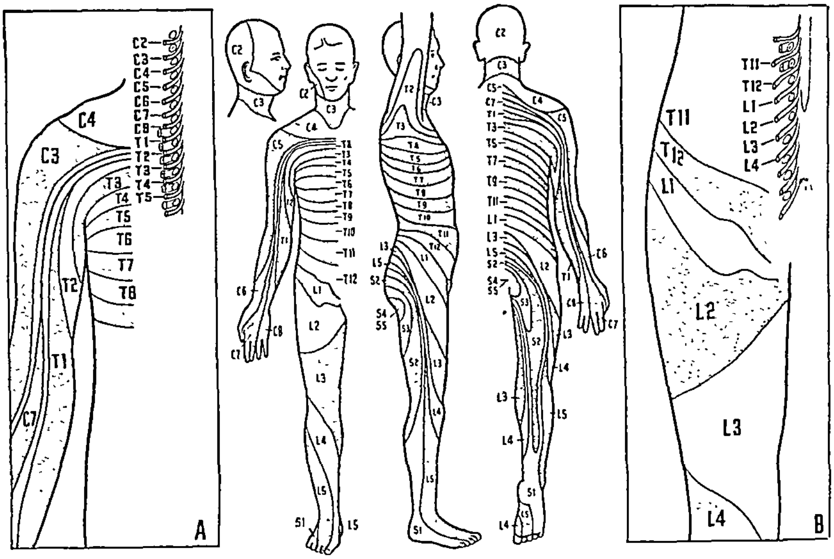

Fig. 1.—Dermatome pattern (after Bailey), with insert *A* showing the disparity between the level of root origin from the cord in the cervicodorsal region and the dermatomes supplied. Insert *B* shows the same relation for the lumbosacral area.

While one is awaiting the development of the roentgenographic plates, a no. 16 French Foley (or, if this type is unavailable, a soft catheter of the same size or smaller) should be inserted under aseptic conditions. The amount of urine obtained must be recorded, for if it exceeds 800 cc. it is likely that the bladder will not show the proper rate of development of reflex activity or return to normalcy that otherwise can be expected in almost every case. This urine should be cultured to serve as a background for subsequent bacteriologic studies and should be examined microscopically. If there is evidence of blood in the urine, pelvic roentgenograms are mandatory and the entire urinary tract may need extensive investigation.

From the roentgenographic department the patient is brought either to his room or to the operating pavilion, still on his admission stretcher. Lumbar puncture with careful manometric studies can now be carried out. Actually, it seems largely academic to discuss the pros and cons of the value of lumbar puncture. The presence of a complete spinal fluid block would indicate a complete occlusion of the subarachnoid space. Anything less than this, even with the so-called quantitative Queckenstedt sign, simply implies an occlusion of the subarachnoid space lying somewhere between a complete blockage and an opening the size of the needle used.[8] Without denying the usefulness of lumbar puncture in gradually developing paraplegia due to tumors and the like, I consider unlikely that advocates of careful manometric examination in patients with acute injury to the spinal cord will ever be able to present statistically significant figures to justify their insistence on this measure as routine. Certainly, in the presence of suspected concomitant cerebral injury, the manometrics would be eliminated. Lumbar puncture by itself, with measurement of the initial pressure, has no contraindication other than the required turning of the patient. On the positive side, one can determine the presence or absence of complete blockage and the presence or absence of blood. The observation of a complete block means little, and the observation of no block means little more. Specific circumstances can easily be cited where either of these observations might be of importance, but their likelihood of occurrence must be afforded statistical insignificance. By and large, the observations on lumbar puncture should receive minor consideration.

On examining the roentgenograms, one must keep certain points in mind. Vertebrae do not slip by each other without injury at least to the ligamentous and cartilaginous structures. In addition, it is infrequent that fracture of the articular facets does not occur. Frequently these fractures take place through the lamina. It has been my experience that the roentgenographic interpretation of the status of the lamina is unreliable. This is largely a result of the inability to secure proper visualization because of the interference of surrounding structures such as the vertebral bodies. Only rarely has it been possible to diagnose even serious laminar fractures prior to laminectomy.

In which cases should open operative procedures be carried out? Agreement is general that all incomplete lesions showing a gradual progression of disability should be explored,[9] in the belief that subdural hemorrhage may be found and arrested or that some other progressive lesion may be controlled. As an academic point, this is open to question. The number of reported cases is extremely small.[10] Also, the serpentine hemorrhages which occur within the substance of the cord are almost impossible to differentiate clinically.[11] However, on the chance that a surgically amenable condition will be found, exploration is advisable. On the opposite side of the picture, when all signs point to a complete transverse lesion most neurosurgeons are inclined to advise conservative treatment, especially when the wound is closed.[12] Most agree that wounds of the cauda equina, whether open or closed, should be considered to be wounds of peripheral nerves and thus amenable to open operation.[13] Some have been enthusiastic about almost routine exploration of all injuries to the spinal cord, especially when a spinal fluid block is present.[14] The policy of the individual neurosurgeon will govern the best method of treatment in a given patient. In the hands of competent neurosurgeons, the mortality rate in laminectomy is extremely low, especially when the hazards of general anesthesia are not included. I have explored most acute lesions, with a gratifying number of patients showing return of useful function and without a single surgical death. If open operative procedures are contemplated, properly typed and matched blood should be on hand for supportive therapy during operation. It is again an academic point to argue that the treatment of blood loss is the avoidance thereof. Even simple surgical procedures are often accompanied with the loss of at least a pint (473 cc.) of blood.[15] In cases of injury of the spinal cord the loss of blood is often not well tolerated.

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[8] Poppen, J. L., and Hurxthal, L. M.: Normal Cerebrospinal Fluid Dynamics in Spinal Cord Tumor Suspects, J. A. M. A. **103**: 391-393 (Aug. 11) 1934.

[9] (*a*) Oldberg.[2b] (*b*) Pilcher.[3c] (*c*) Poppen and Hurxthal.[8] (*d*) Reports of Committees upon Injuries of the Nervous System: II. Injuries of the Spinal Cord and Cauda Equina, Medical Research Council, Special Report Series, no. 88, London, His Majesty's Stationery Office, 1924, pp. 54-58.

If open operative procedures are not decided on, the course to be followed must be determined. In cervical lesions, traction is mandatory if displacement of vertebrae is present. Even if no dislocation is diagnosed, traction is the most comfortable and safest method of safeguarding against further damage to the injured cord. Halter traction entails certain hazards, such as pressure on the jaws with the possibility of erosion of skin, toothache and restriction of feeding. These hazards are not present with the application of Crutchfield or other types of tongs,[16] but certain points must be remembered in applying these. The first is to avoid placement over the motor areas (straight above the anterior part of the ears) and to determine with certainty that the inner table of the skull is not pierced. If no tongs are available, stainless steel wires threaded between the skull and the dura mater on opposite sides of the longitudinal sinus are a satisfactory substitute. Initial traction should not be enough to give the patient discomfort. Usually 5 to 8 pounds (2 to 4 Kg.) can easily be tolerated. Additional weight, up to 25 or 30 pounds (11 to 14 Kg.), should be added gradually until roentgenographic check-up reveals adequate reduction. In a few cases, it will be found that the facets are locked and will require operation or manipulation.[17] The latter can hardly be sanctioned, despite approval by some surgeons. Neurosurgeons are all too aware of the disastrous aftermath of manipulation of the vertebral canal by osteopaths.[18] The principle of closed reduction of fractures often involves increasing the deformity before the deformity itself can be reduced. With the spinal canal already reduced to a point where the spinal cord is being impinged on, such manipulation may readily result in further neural damage. It is far better to allow the bony lesion to remain as it is than to expose the patient to a dangerous procedure. In figure 2 is seen the reproduction of a roentgenogram of a patient who had almost no disability except for loss of deltoid activity. Not that such an end result should be accepted, but to illustrate an extreme, this case is presented.

L. M., a 33 year old Negro, was injured in an automobile accident, suffering loss of consciousness for five days. It was stated that he had an immediate quadriplegia and was placed in hyperextension without traction for twenty days. With return of consciousness, bladder control was present, but it was two months before bowel control was regained. Within one month after injury, function began to return, followed shortly by the recovery of movement in the hands and arms. When first seen, almost five months after injury, the patient was completely ambulatory, with full control of urination (some urgency), defecation and erectile power. Results of examination were normal except for (1) exaggerated tendon reflexes on the left side; (2) absent abdominal and cremasteric reflexes on the left; (3) slight hypesthesia on entire left side of the body, starting at the sixth cervical dermatome; (4) decided atrophy of the left deltoid and pectoral muscles; (5) moderate atrophy and weakness of the right deltoid muscles, and (6) hyperesthesia of the third to fifth cervical dermatomes on the right and from the second to sixth cervical dermatomes on the left.

If traction is decided on, it still is necessary to determine the probability of benefit from later laminectomy. The factors involved in this decision include (1) locking of facets, (2) recovery at a rate less than could be expected or (3) persistence of a cerebrospinal fluid block. The first point has already been discussed. The second point requires further elaboration. The presence of root symptoms, and their persistence, indicates the likelihood of at least limited improvement by surgical decompression. Since neurologic improvement can be expected within hours after the application of traction, delay of such signs for days has several meanings. First, the lesion may be irreversible and, as such, may be beyond aid. Second, the lesion may be maintaining its status because of surgically amenable deformities, such as protrusion of an intervertebral disk or projection of a bony fragment from a fractured lamina into the spinal canal. How can a decision be reached? Lumbar puncture with careful manometrics may be of benefit. At least some measure of the patency of the subarachnoid space can

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10. Ver Brugghen, A.: Extradural Spinal Hemorrhage, Ann. Surg. **123:** 154-159 (Jan.) 1946.

11. (a) Hassin, G. B.: Pathological Considerations of Contusion of Cauda Equina, J. Neuropath. & Exper. Neurol. **3:** 172-183 (April) 1944; (b) Traumatic Degeneration of the Spinal Cord (Spinal Concussion), ibid. **1:** 100-110 (Jan.) 1942. (c) Scarff, J. E.: Pathology and Treatment of Spinal Injuries, New York State J. Med. **37:** 461-477 (March 1) 1937.

12. (a) Oldberg.[2b] (b) Scarff.[11c] (c) Davidoff, L. M.: Spinal Cord Injuries, S. Clin. North America **21:** 433-441 (April) 1941.

13. Davis, L., and Haven, H. A.: Neurosurgical Aspects of Injuries to the Back, in Ellis, J. G.: The Injured Back and Its Treatment, Springfield, Ill., Charles C Thomas, Publisher, 1940, pp. 157-192.

14. (a) Semmes.[7b]. (b) Tinsley, M.: Compound Injuries of the Spinal Cord, J. Neurosurg. **3:** 306-309 (July) 1946. (c) Pool, J. L.: Gunshot Wounds of the Spine: Observations from an Evacuation Hospital, Surg., Gynec. & Obst. **81:** 617-622 (Dec.) 1945. (d) Kennedy, F.: Denker, P. G., and Osborne, R. L.: Early Laminectomy for Spinal Cord Injury Not Due to Subluxation, Am. J. Surg. **60:** 13-21 (April) 1943. (e) McCravey, A.: War Wounds of the Spinal Cord: A Plea for Exploration of Spinal Cord and Cauda Equina Injuries, J. A. M. A. **129:** 152-153 (Sept. 8) 1945.

15. Phemister, D. B.: The Mechanism and Management of Surgical Shock, J. A. M. A. **127:** 1109-1112 (April 28) 1945.

16. Crutchfield, W. G.: Further Observations on the Treatment of Fracture Dislocations of the Cervical Spine with Skeletal Traction, Surg., Gynec. & Obst. **63:** 513-517 (Oct.) 1936.

17. Morton, H. S.: A Method of Reducing Fracture Dislocations of the Cervical Vertebrae with a Report of Two Illustrative Cases, J. Bone & Joint Surg. **25:** 859-866 (Oct.) 1943.

18. Pratt-Thomas, H. R., and Berger, K. E.: Cerebellar and Spinal Injuries After Chiropractic Manipulation, J. A. M. A. **133:** 600-603 (March 1) 1947.

be obtained. Usually, any degree of patency is considered to be adequate patency. Lack of patency means encroachment of a severe degree. Is this encroachment too great? There is no way to tell except by exploration. The question then revolves around the possible benefit of laminectomy and the value of the knowledge of the status of the cord versus the hazards of the procedure. This must be an individual decision.

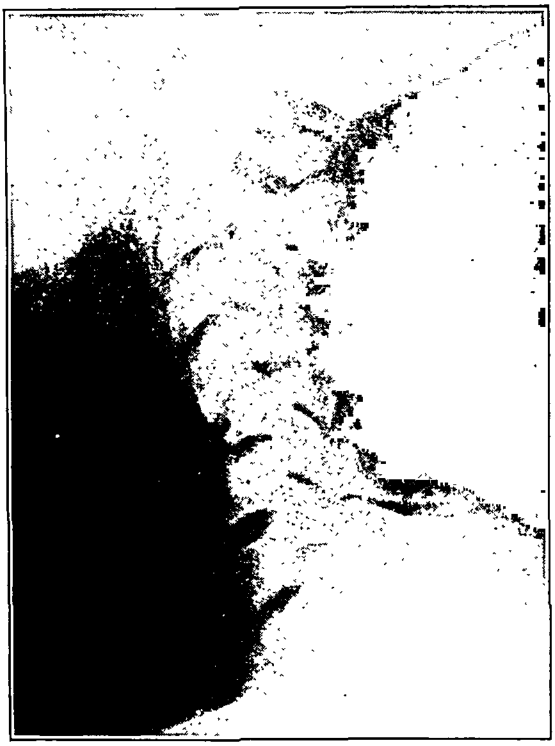

Fig. 2.—Lateral roentgenogram of the cervical part of the spine of L. M., a 33 year old Negro. The fourth cervical vertebra is displaced anteriorly on the fifth, with little or no space left representing the spinal canal. The facets are locked, and the superior articular process of the fifth cervical vertebra has been crushed. The anterior superior edge of the body of the fifth cervical vertebra shows fracture. The early bony bridging between the fourth, fifth and sixth vertebrae may be noted. This roentgenogram was taken five months after injury, when the patient was almost fully recovered.

Assuming that traction is used, the Stryker frame can be used by drilling a hole through the center revolving pin. The usual accessories can be attached to the regular hospital bed. In spite of the presence of traction, the patient must still be turned at one to two hour intervals. Details of nursing care have already been described.[19]

Postoperatively, the patient can be handled most easily on a Stryker frame[20] (fig. 3). If this device is not available, a hair mattress with boards beneath it, a sponge rubber mattress, an air mattress or an innerspring mattress can be utilized. Regardless of the type of support utilized, the patient must be turned at least every two hours, but preferably every hour, night and day. Even the appearance of an area of skin resembling a first degree burn should be studiously avoided. No single feature of care of paraplegic patients will reflect inadequacy of care as readily as the development of decubitus ulcers. This will be discussed more fully. A careful check on intake and output of fluids must be kept. Daily analysis of urine and weekly determinations of hemoglobin, red and white blood cells and serum proteins should be done. In the early stages of care, plain roentgenograms of the abdomen should be taken no less frequently than monthly as a check for calculi in the urinary tract. Fluids should be kept adequate to maintain a urinary output of more than 2,000 cc. daily. The diet should have a high protein, high vitamin and high caloric content. In the face of a falling serum protein level, the following formula will be found to be helpful in obtaining a high protein intake:

| | |
|---|---|
| Powdered skimmed milk | ⅔ cup (315 cc.) |
| Skimmed milk | 1 pint (473 cc.) |
| Egg whites | 6 |
| Sugar | 1 to 2 tablespoons (15 to 30 cc.) |

Flavored to taste and sweetened to desire (after Kleinman[21]).

This formula provides 92 Gm. carbohydrate, 70.5 Gm. protein and 2 Gm. fat for each quart, a caloric content of 665 calories per quart. It should be given as between meal feedings, for it empties from the stomach rapidly. It may be cooled, frozen or warmed as desired.

### CONTINUED CARE

As already indicated, diet and fluids require careful attention. The following phases require specific attention:

1. *Bladder.*—Whenever there is severe damage to the spinal cord or spinal nerve roots in the cauda equina, there is complete flaccid paralysis of the bladder initially. If the rational method of bladder care outlined by Munro[1f] is followed, it may be possible to discard the catheter with the development of automatic action of the bladder as soon as six weeks after injury. Small wonder that the almost routine performance of suprapubic cystotomies by the armed forces

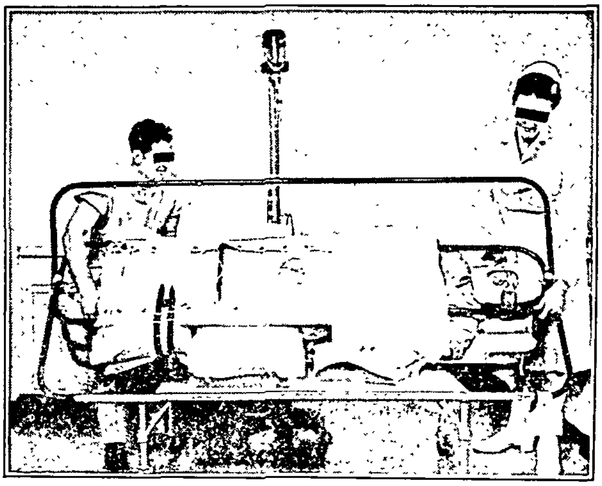

Fig. 3.—A patient being turned on a Stryker frame. The sheet and the broad leg band afford additional security in preventing the patient from falling out if the turning is done too slowly. Pillows are in position before the bottom or top sections of the frame are applied, making lifting unnecessary.

was eyed with wonder by some.[22] Most paraplegi patients do not reach the urologist.[23] Urologists o consider suprapubic cystotomy the ideal met

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19. Davis, T.; Freeman, L. W., and Heimburger, R. F.: Nursing Care of the Paraplegic Patient, to be published.

20. Stryker, H.: Device for Turning Frame Patient, J. A. M. A. 113: 1731-1732 (Nov. 4) 1939.

21. Kleinman, A. M., and Sprinz, H.: Problems of Nut actions of the Conference on Spinal Cord Injuries, Ar Second Service Command, 1945, pp. 60-69.

22. Martin, J., and Davis, L.: Studies upon I. The Development of Automatic Micturition, (Oct.) 1947.

23. Munger, A. D.: The Urologic-Orth Bladder, J. Urol. 37: 54-59 (Jan.) 193

treatment of the paralyzed bladder.[24] This attitude is based largely on observations from World War I. Neglected patients should have at least temporary suprapubic tubes, but cystotomy cannot be regarded as necessary and, in fact, is usually unnecessary in most paraplegic patients.[1b] Urologists who have had extensive experience with paraplegic patients advocate the rapid abandonment of suprapubic intubation[25] and its replacement largely by the methods outlined by Munro. If nothing more than the following procedure is carried out, many patients with spinal cord injury will have at least an automatic bladder within six weeks: 1. Immediate aseptic catheterization with a no. 16 French Foley catheter with a 5 cc. retention bag. 2. Immediate cystometric examination (conducted as follows [fig. 4]: with the siphon tube clamped off, 50 cc. of fluid are added at a rate of 100 drops per minute and the level of fluid in the cystometric tube is read; another 50 cc. are added and the reading is again taken; this is continued until 400 cc. have been added, the pressure reading has reached 70 cm. of water, or leakage has occurred around the catheter. In the acute stage, the pressure at 400 cc. of fluid will usually be found to be in the range of 5 to 8 cm. of water). 3. The siphon tube is now set at the level at which the fluid was found to rise in the cystometer tube when 400 cc. had been instilled. Cystometric examination of this type should be carried out at least once a day, and the siphon tube should be placed at the level on the cystometer tube found when 400 cc. of fluid have been placed in the bladder. With this attention, it will be easy to follow the course of neurologic improvement or the development of automatic reflex activity. After the atonic stage, most neurogenic bladders resulting from spinal cord injury pass into a hypotonic, then a hypertonic or normal reflex neurogenic phase. Some will rapidly become almost normal if the spinal cord has suffered only a minor concussive injury, but unless this occurs within one month it is unlikely that such will ever be the case.[26] When the bladder shows by cystometry a pressure of more than 70 cm. of water with a content of 400 cc. or less, the catheter should be removed. Administration of belladonna in full dosage may be of benefit at this time. The patient should be made to urinate at two hour intervals by using a combination of voluntary expulsive force, suprapubic tapping or actual Credé pressure and even submersion in a tub of warm water. This should be done both day and night, until daily morning catheterization shows a residual of less than 1 ounce (28 Gm.). With this goal achieved, the time interval can be lengthened gradually to four hours. Then, by restriction of bedtime fluids, the patient can spend the entir

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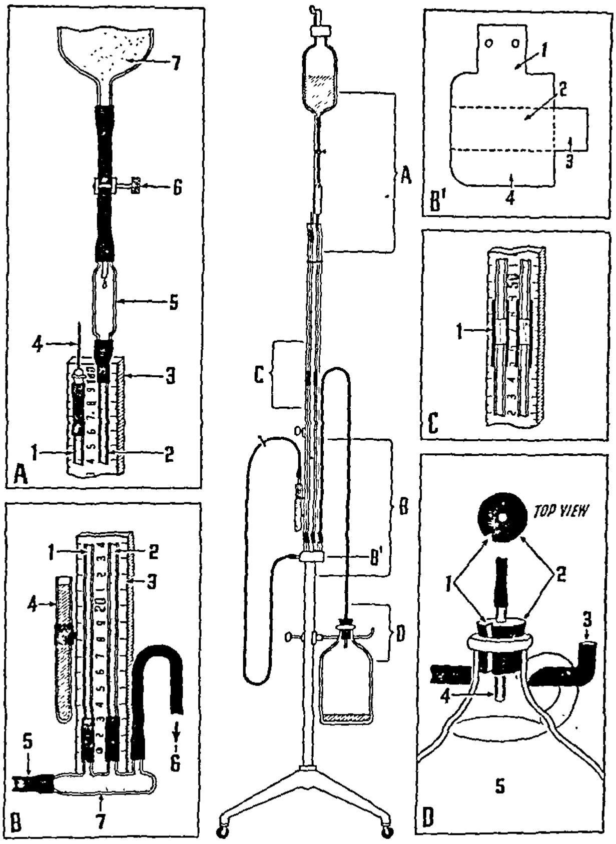

Fig. 4.—Tidal drainage apparatus. A wooden meter stick is supplied with two clips for fastening to an ordinary hospital infusion bottle stand, and small holes are drilled at 2 cm. intervals on the left side of it. At the bottom of the stick is attached a small metal trough, constructed according to panel $B^1$. Dimensions are not given because of the variation in size of Carrell-Dakin tubes, but the average folded length is about *2 inches (5 cm). In panel A: (1) top of cystometer and air inlet arm* made of 5 mm. bore glass tubing, 50 cm. in length; (2) top of drip tube of same size and length; (3) meter stick; (4) hypodermic needle (23 gage for 10 drops per minute infusion, larger for faster rates) connected to cystometer tube by snugly fitting rubber tubing; (5) Murphy drip tube without hole; (6) Hoffman or Mohr screw clamp for regulating rate of infusion, and (7) Kelly flask or other graduated bottle (empty Baxter bottles make an excellent container if the pharmacy manufactures, bottles and sterilizes the irrigating fluids) connected to Murphy drip by rubber tubing. In panel *B*, showing details at bottom end of apparatus: (1) lower section, 5 mm. bore, 50 cm. glass tubing (connected to upper sections by snugly fitting rubber tubing as shown in panel *C*) of cystometer tube; (2) lower section, same bore and length, of drip tube; (3) meter stick (1 mm. holes in side not shown); (4) glass test tube clipped *or taped to side of meter stick, filled with antiseptic solution,* which serves to receive the tube leading to the catheter when the patient is disconnected from the apparatus; (5) rubber tubing, 3/16 inch (0.48 cm.) or larger and sufficiently long to reach from stand in its desired position to the catheter with some slack, with a glass connected to the catheter *at the end; (6) siphon arm rubber tubing, 3/16 inch (0.48 cm.) inside* diameter with wall thick enough to prevent kinking and about 160 cm. long, and (7) Carrell-Dakin tube, three-way. The arrangement as shown allows the least amount of debris to collect. It is attached by snugly fitted pieces of rubber tubing to the glass tubes (1) and (2). Panel *D* shows a simple method of avoiding contamination and spillage. (2) Number 5 one-hole stopper with a notch (1) cut in the side; (3) Bent clamp to suspend bottle on stand at proper height; (4) glass tube of larger bore than 3/16 inch (0.48 cm.) tube passing at least 1 inch (2.5 cm.) beyond bottom of stopper, and (5) ordinary gallon jug.

The cystometer and drip tubes are attached to the meter stick with clips or with rubber bands. Thus, in practice, the glass tubes are disconnected from the Carrell-Dakin tube, leaving the rubber connections on the latter. The sections of glass tubing are disconnected, leaving the *needle on the one and removing the other from the connection to the* Murphy drip. When the long rubber tubing is rolled up, the entire apparatus can be contained in a sterile wrap 60 cm. long. After sterilization, the assembly is carried out as follows: The glass connector of the tube to the catheter is placed in the test tube receptacle and the *siphon-arm stopper in the sterile water bottle. The Carrell-Dakin tube* is set in the trough and the four lengths of glass tubing are attached to it. The connected glass tubes are either threaded through already attached rubber bands or are clipped in place. The apparatus is now adjusted so that the zero mark on the meter stick is approximately level with the level of the symphysis pubis in the supine patient. The infusion flask is then hung and its height is regulated to give attachment without kinking to the drip tube. It is desirable to have a toy balloon in each setup to test the efficiency of the apparatus. This is attached to the glass connector on the tube leading to the bladder. The top of the siphon arm is set at 10 cm. by means of a loop of wire arranged like a cup hook. The infusion fluid is allowed to run into the balloon fairly rapidly. When the pressure within the balloon is greater than the height of the siphon arm, the inflow is cut off. The balloon should empty completely if the waste bottle is at a distance of 26 cm. below zero level. If it does not empty completely, the waste bottle should be lowered. The apparatus can then be applied to the patient and a cystometric examination should be done (see text). An alternative but less satisfactory means of suspending the siphon arm utilizes a piece of tape and a thumb tack.

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of the Urogenital Tract, J. Urol.

patients with atonic bladders were seen, but overdistention was the cause, for neurologic investigation revealed the intactness of the reflex arcs.[27] As such, it is indeed rare that a patient should be found who will not have a good automatic bladder, provided that meticulous attention be paid to its management.

Infection of the bladder or other parts of the urinary tract is common. Cystitis is present once a catheter is introduced into the bladder, whether through a suprapubic wound or through the urethra. However, as long as careful attention is paid to the irrigation system, this infection will be subclinical. The irrigating fluids used include solutions G (citric acid 32.25 Gm., magnesium oxide 2.92 Gm. and sodium bicarbonate [anhydrous] 3.84 Gm. per liter of distilled water) and M (citric acid 32.25 Gm. magnesium oxide 2.92 Gm. and sodium bicarbonate [anhydrous] 8.84 Gm. per liter of distilled water),[28] 2 per cent boric acid, 0.5 per cent acetic acid and others. Solution G has received wide attention and extensive use. It is probably the best all-round solution to use, although solution M has the advantage of a more favorable $p_H$ (5.0) after the first few days of irrigation. Solution G may produce inflammation after prolonged use.

Unless the urethral catheter is small enough to allow escape of secretions and is changed at weekly intervals, the subclinical infections of the urinary tract may progress to clinical complications in the lower part of the urinary tract. Most frequent of these is epididymitis, frequently encountered when catheters larger than a no. 18 F are in use. The large catheter prevents egress of fluid from and produces edematous closure of the bulbourethral, ejaculatory and prostatic ducts. The resulting stasis is favorable to infection. Inspection and palpation when fever is present makes diagnosis simple. Treatment consists of suspension of the testicles and cold packs in the early stages, and heat in the later stages if suppuration appears likely.

Actual abscess formation necessitates incision and drainage. Prompt action prevents progression, and, even in the neglected case, urinary fistulas will be uncommon, provided that the aforementioned steps are taken in conjunction with intramuscular administration of penicillin and high fluid intake. A few patients were treated successfully by infiltration of the spermatic cord [29] and the lumbar sympathetic chain [30] with procaine hydrochloride solution.

Second in frequency of development, most usually traceable to temporary occlusion of the drainage system or to overdistention of the bladder by placement of the siphon arm of the drainage system too high, are the infections of the upper part of the urinary tract. In some paraplegic patients the ureterovesical orifices are wide open, a state conducive to reflux. This has been seen in many patients subjected to chronic overdistention of the bladder, but rarely, if ever, in those cases in which overdistention was avoided. This is probably the severest indictment of the methods of treatment of bladder paralysis by overflow distention or Credé expression. With the passage of urine containing bacteria from the bladder up the open ureters, enhanced by positional stasis within the renal pelvis, various grades of renal infection are encountered, dependent on how soon the proper diagnosis is arrived at and proper treatment instituted.

Not too infrequently, positional stasis is enhanced by an actual blockage of the ureter by inflammatory ureteral atony or by opaque and nonopaque calculi. The clinical signs of infection of the upper part of the urinary tract in paraplegia include: (1) chills and temperature elevation, usually to 104 F. or above; (2) the appearance of apparent health in the face of such high temperatures, followed by the expected appearance of grave illness in a matter of hours, and (3) resistance in the flank on the involved side, or on both sides if the infection is bilateral (which appears to be usual after the first twenty-four hours).

Since no description of this resistance has appeared in the literature, a brief description is given. When the patient is examined in the supine position, pressure applied alternately and then together in the flanks will give a measure of resistance. In the spastic patient, this may be considerable, and it may be necessary to test many times before a reflex-free period is encountered to give a measure of resting resistance to pressure. The patient is then placed in the prone position and the procedure repeated. It will be found that resistance is high on the involved side. This is probably a result of ureteral inflammation with irritative effects on the psoas muscle.

Examination of the urine usually fails to keep attention directed at the urinary tract, for culture most frequently reveals only the usual Escherichia coli, Bacillus proteus, Bacillus pyocyaneus and Bacillus aerogenes—present in cultures since shortly after the catheter was inserted. However, later examination often reveals staphylococci or streptococci. This pertains because in the early phases, there is reflex or obstructive suppression of urinary drainage from the involved side. When this phase is overcome, the actual pathogenic organism is drained off, to be picked up by culture.

Treatment consists of: (1) penicillin, 20,000 to 30,000 units, intramuscularly every three hours, (2) intravenous fluids to give an output above 2,500 cc. and (3) plain roentgenogram of the abdomen in a search for possible calculous obstruction.

If calculous obstruction is demonstrated, cystoscopic examination and passage of a catheter to the renal pelvis constitute the best form of treatment. It is felt that catheterization of the involved side might well be considered in every case, for dramatic improvement is seen when drainage of the involved kidney is obtained. It might be argued that excretion urograms will provide a rational basis for selection of cases for renal catheterization. This is undoubtedly true, but the patient is often so ill that the added discomfort of this procedure makes it inadvisable, whereas cystoscopic examination can be accomplished without this discomfort and more illucidating retrograde urograms can be made if needed.

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27. Heimburger, R. F.; Freeman, L. W., and Wilde, N. H.: Sacral Nerve Innervation of the Human Bladder, J. Neurosurg. **5**: 154-164 (March) 1948.

28. Suby, H. I., and Albright, F.: Dissolution of Phosphatic Urinary Calculi by the Retrograde Introduction of a Citrate Solution Containing Magnesium, New England J. Med. **228**: 81-91 (Jan. 21) 1943.

29. (*a*) Kulenkampff, D.: Ueber örtliche Betäubung zu Behandlungszwecken, bes. der akuten Epididymitis, München. med. Wchnschr. **84**: 1175-1176 (July 23) 1937. (*b*) Smith, D. R.: Treatment of Epididymitis by Infiltration of Spermatic Cord with Procaine Hydrochloride, J. Urol. **46**: 74-76 (July) 1941. (*c*) Imbert, M.: Guérison rapide des orchi-épididymitis aigués par des injections déférentielles de novocaine, J. d'urol. **47**: 177-192 (March) 1939.

30. Bilger, F.; Zimmer, A., and Lachowiecki, J.: Traitement de la douleur dans l'épididymite aiguë par l'infiltration du sympathetique lombaire, Progrès méd., pp. 9-10, Jan. 1, 1938.

Once the progress of infection is arrested by penicillin and drainage, recovery is rapid. In the majority of cases, penicillin therapy and forced fluids will insure complete recovery. If, however, with these measures having been instituted soon after the onset of the chills (even before the diagnosis is confirmed), the temperature fails to return to normal within thirty-six hours, blockage of the involved renal pelvis is almost assured. The gram-positive organisms, controlled by the penicillin, no longer contribute to the picture, and the infection now is accompanied by a much lower temperature (100 to 103 F.). The organisms responsible are gram negative, and unless prompt action is taken to insure free drainage of the renal pelvis, the cortex may be invaded, with abscess formation resulting and progression to perirenal abscess, and further extension into neighboring structures, bacteremia and death.

In these cases, streptomycin therapy (0.4 Gm. [400,000 units] every four hours for at least seven days) is often useful, but is no substitute for adequate drainage and should be used only as conjunctive treatment. A fairly high percentage of the patients will be cured when the drainage is spontaneously established, but, if stones which obstruct fail to pass, progression of the process is to be expected. Bacteremia has been found infrequently in patients who subsequently recovered from these complications. There is no substitute for drainage of an abscess, a principle that should not be overlooked in the care of paraplegic patients.

Cystitis, as a urinary tract complication, is rarely of clinical significance, except in the neglected case. It may be bacterial or chemical, and the presence of blood cells in the urine should lead one to suspect its presence. Alkaline incrustations are common when suprapubic tubes are left in place for long periods with inadequate irrigation. These incrustations disappear rapidly when solutions G or M are used as irrigating fluids.[31] Inflammation subsides with a regimen of high fluid output, proper irrigation with solution M and meticulous care of the catheters and the orifices through which they are introduced.

Other complications encountered in the early phases of treatment include balanitis, from improper attention to the catheter and the penis. The penis should be kept clean, and a sterile gauze pad, dipped in benzalkonium chloride solution, 1:10,000, should be wrapped about the catheter at the end of the penis. Urethroscrotal fistulas may develop when the catheter size exceeds that of a no. 24 F, but may also develop with smaller ones unless kinking of the catheter is prevented.

2. *Skin.*—As previously indicated, the skin will not tolerate long periods of pressure with concomitant ischemia. The question of trophic influences and other allied explanations are trivial in relation to pressure.[32] The loss of normal sensory impulses from areas subjected to undue periods of ischemia eliminates the reflex moving response, usually carried out at a subconscious level. Sympathetic innervation can function only under physiologic or early pathophysiologic conditions, and is entirely incapable of functioning in the presence of severe tissue trauma where locally produced substances[33] produce maximum vasodilatation in the face of generalized vasoconstriction. On the contrary, vasoconstriction would be expected to be initiated by the painful impulses arising during the advent of ischemia, thus implying that normal skin should be more susceptible to decubitus ulceration. Whatever the academic answer, the practical one consists of avoidance of prolonged ischemia. Since the patient is incapable of turning himself either reflexly or voluntarily, he must be turned by attendants. The only safe rule is to turn the patient every one or two hours day and night. The development of hypoproteinemia, which leads to edema and bullous formations in the skin, also predisposes to the development of ulceration of the skin. To maintain the skin in good condition, it is essential to keep the protein intake at a high level as noted.

It is of utmost importance that the skin be kept clean and dry at all times. Soiling of the skin with urine and feces must be assiduously avoided, or promptly taken care of in case of accidental soilage. The patient must be kept on smooth, clean sheets at all times, for a single wrinkle can bring disastrous consequences. The use of quilted pads or inflated cushions or rings cannot be condoned, for they concentrate the weight bearing at a single point. Air or fluid mattresses avoid this concentration of the weight. Positioning is accomplished by the use of footboards and pillows of various sizes. The knees should always be flexed about 15 degrees in the supine and prone positions, with the feet at right angles and the heels suspended clear of the sheet. In the lateral positions, a pillow should be placed between the legs to keep the knees and ankles apart, with the feet supported at right angles with pillows. Sheets and bedclothing never should be allowed to rest on the upright toes, and likewise the toes should never support the weight of the foot in the prone position. Turning should be accomplished with a draw sheet to avoid dragging the patient across the sheets.

If a pressure area has developed, marked only by redness, it should be massaged with alcohol and sprinkled with powder. This advice is given with reservation, for the appearance of markedly reddened areas indicates that the patient cannot tolerate the amount of time that he was subjected to that degree of pressure. The tissues beneath a pressure area may become gangrenous without breaking down the skin, giving the appearance of a subcutaneous abscess. No amount of massage will retrieve gangrenous tissues. If the patient is admitted with actual decubitus ulcers (marked by blackened patches of skin), immediate debridement should be carried out. At the first debridement, excision should be carried to within about 2 mm. of normal skin and down as deep as necessary. The depth of the excision will usually be found to reach all the way to the periosteum, and special attention should be given to the areas which extend beyond the bony prominences. Excision right up to normal skin in early stages is accompanied with too much bleeding. Several days after the initial excision, the remainder of the necrotic tissue can be excised. Sterile fine mesh gauze should be lightly packed into all crevices, and dry sponges should be applied over this. Dressings should be changed in accordance with the amount of drainage present. Usually once a day will be sufficient. When dressings are changed, the wound should be cleansed with weak hydrogen peroxide, washed carefully with white soap and water and rinsed thoroughly with sterile saline solution. Dry gauze should then be reapplied. If the general outlines of therapy are carried out in conjunction with this method of handling decubiti, in about ten days granulation will be proceeding rapidly. At this point, it is important to make careful inspection of the decubitus for undermined edges, for the granulations will often wall off a pocket which soon becomes infected. All such crevices must be packed. Several points must be made in regard to infecting organisms. Generally, E. coli and B. proteus are found in cultures of these sores. The treatment outlined keeps these organisms under control. Occasionally, however, the granulations will be marked by hemorrhagic spots and blackened areas. These almost invariably denote the presence of streptococci, and intramuscular treatment with penicillin must be started. The presence on the dressings of a greenish yellow to blue discoloration denotes the presence of B. pyocyaneus. The easiest (and almost astounding) method to combat these organisms is by a thorough rinsing with 2 per cent aqueous merbromin solution. Of the many agents used on decubiti, this is the only one which can be said to be specific and apparently harmless. In regard to the application of various ointments, such as red cell paste, scarlet red ointment, tyrothricin, penicillin and sugar, plasma and penicillin, chlorophyl paste and cod liver oil, almost all will be effective in sympathetic hands—just as any wound will heal with careful supervision. No ointment yet used has any advantage worthy of special mention. Yet, none will particularly retard the process of healing, and none should be marked for special condemnation. On the other hand, any substance believed to be beneficial should be used, for it will certainly help the sore get its proper attention—cleanliness. Dry treatment still remains the method of choice.

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[31] Herger, C. C., and Sauer, H. R.: Treatment of Alkaline Incrustations of the Urinary Tract with Solution "G," J. Urol. **53**: 696-701 (May) 1945.

[32] Gibbon, J. H., Jr., and Freeman, L. W.: The Primary Closure of Decubitus Ulcers, Ann. Surg. **124**: 1148-1164 (Dec.) 1946.

[33] Lewis, T.: The Blood Vessels of the Human Skin and Their Responses, London, Shaw & Sons, Ltd., 1927.

Once granulation begins, one must decide whether to await healing by using dressings or to proceed with surgical treatment. Any sore with dimensions greater than 3 cm. in depth or 5 cm. in diameter can be expected to take more than six months to reach healing. Thus, very small sores can be treated with dressings alone. However, the superiority of surgical methods is unquestionable.[34] Skin grafts—including small deep, postage stamp and split thickness grafts—have several unfavorable features. The main one is the undesirably thin scar left over the bony prominence. The only point in favor of grafting is that a temporary skin dressing is obtained. However, provided that evidences of healing are present, the patient is in positive nitrogen balance and pronounced spacticity or flexor spasms are not present, surgical excision of the entire ulcer with plastic rotation flaps is highly successful and should be used on almost every severe decubitus.[32] For superficial sores, there is nothing superior to sunlight and fine mesh dry dressings. Skin grafts hasten the healing of these sores and provide a fairly good permanent covering.

The patient must be constantly reminded of the hazards of prolonged weight bearing. Eventually, the patient will be the best one to determine how long he can maintain a given position without embarrassing his skin.

3. *Bowel.*—Coincident with the severe disruption of reflex action in the limbs and bladder, the bowel likewise loses its reflex function. In the early stages an actual ileus may exist. In lower cord injuries this may not become obvious for many hours and most frequently resolves of its own accord. However, in cervical cord injuries, death may result from this complication. With the entire load of respiratory exchanges thrown on the diaphragm, distention in the abdomen is not tolerated. Diminution of diaphragmatic excursions decreases the respiratory exchange and leads to hypostatic accumulations of fluid, pneumonitis and death. Percussion of the abdomen and stethoscopic examination will make the diagnosis obvious. One cubic centimeter of neostigmine methylsulfate, 1 : 4,000, given every one to two hours for three to six doses, will usually resolves the ileus.[35] Posterior pituitary extract or beta-hypophamine in doses of 0.5 to 1.0 cc. are much more effective but carry a bit more danger of undesirable side reactions. Warm enemas are frequently helpful, and a rectal tube often brings dramatic relief. It has been necessary only on rare occasions to use drugs for relief, the rectal tube most usually being all that is needed. The rectal sphincter, like the external urethral sphincter of the male, is usually tightly closed after spinal cord injury and is relaxed only when the fourth sacral nerve, or the conus medullaris, is directly damaged. In later stages, the sphincter regains reflex action as does the bowel. As demonstrated by Denny-Brown and Robertson[36] and White,[37] the bowel has activity very similar to that of the bladder. In the first few weeks, enemas of warm water and soap suds should be given every other day with regularity. Digital examination should be done at least weekly, for impactions are frequent. A case which strongly emphasizes this is related briefly.

G. L., a 26 year old infantry private, sustained a gunshot wound of the lumbodorsal region with the wound of exit at the umbilicus. Motor and sensory paralysis from the waist down was immediate, and bowel and bladder control were lost. Laparotomy, with repair of perforated segments of bowel, followed by laminectomy, was carried out. Within two weeks the patient was started through the chain of evacuations from the Southwest Pacific Area. About one month later, he was admitted to a neurosurgical center in the states. On perusal of the records, it was found that the patient, in addition to the inevitable malaria and discoloration due to quinacrine hydrochloride, suffered from some "rare disease of the abdominal lymph nodes." On examination, these "lymph nodes" were found to indent. Roentgen examination of the abdomen revealed the presence of twenty-one partially calcified fecal masses, each the size of a tennis ball. These were removed manually in the course of four days.

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[34] (*a*) Gibbon and Freeman,[32] (*b*) Croce, E. J.; Schullinger, D. N., and Shearer, T. P.: Operative Treatment of Decubitus Ulcer, Ann. Surg. **123**: 53-69 (Jan.) 1946. (*c*) Barker, D. E.; Elkins, C. W., and Poer, D. H.: Methods of Closure of Decubitius Ulcers in the Paralyzed Patient, ibid. **123**: 523-530 (April) 1946.

[35] (*a*) Marden, P. A., and Williamson, E. G.: The Use of Prostigmine Methylsulfate in the Prevention of Postoperative Intestinal Atony and Urinary Bladder Retention, Surg., Gynec. & Obst. **69**: 61-64 (July) 1939. (*b*) Gordon, E. J.: The Treatment of Postoperative Abdominal Distention with Prostigmine, Surgery **7**: 686-695 (May) 1940.

[36] Denny-Brown, D., and Robertson, E. G.: An Investigation of the Nervous Control of Defecation, Brain **58**: 256-310 (June) 1935.

[37] White, J. C.; Verlot, M. G., and Ehrentheil, O.: Neurogenic Disturbances of the Colon and Their Investigation by the Colonmetrogram: A Preliminary Report, Ann. Surg. **112**: 1042-1057 (Dec.) 1940.

As the bladder function begins to develop automaticity, a bowel control program should be instituted. This program is roughly as follows:

As soon as the patient can sit up, enemas are given in that position. Laxatives should be given in the form of 5 to 15 cc. of liquid petrolatum and/or 2 to 6 cc. of cascara sagrada given the previous day. In a short time, the patient should be given the duty of administering his own enemas and doing his own digital examinations for possible impactions. The patient then starts a schedule of liquid petrolatum and cascara sagrada each evening, judging the dosage by the consistency of the stools. Every morning, at exactly the same time, a glycerin suppository should be inserted up to fifteen minutes before the patient gets on the stool. A full hour should be spent before the trial at evacuation is ended. If no stool has resulted, the patient should take 2 cc. of cascara sagrada and go about his daily activities. The usual laxative is taken at bedtime. On the following morning, the procedure is repeated. If no stool results from this effort, an enema should be taken. The entire procedure is then begun again. In a few weeks, regular daily bowel movements will be established and enemas will be needed rarely. Foods are briefly outlined to the patient in regard to their effect on stool consistency ("looseners"—prunes, fruits and roughage; "binders"—cheese, meat, beans and other protein-rich foods). It is pointed out also that inactivity and drugs such as morphine and codeine give hard stools. Emotional upsets and many patent medicines give loose stools. Although much straining is necessary in early stages of training, regularity leads to less. A corset or abdominal binder is often useful. If hemorrhoids develop, repair should await regular bowel habits. There need be no acceptable end result in regard to bowel function other than full control with regular evacuations.

*(To Be Continued)*

# Clinical Notes, Suggestions and New Instruments

## URINARY OBSTRUCTION DUE TO TRIPELENNAMINE HYDROCHLORIDE

SAMUEL A. WOLFSON, M.D.
Los Angeles

Various side reactions from the use of tripelennamine hydrochloride (pyribenzamine® hydrochloride) have been observed.[1] Drowsiness, dizziness, gastric disturbances and headache have been the responses most commonly evoked. Less frequent in occurrence have been urinary burning and urinary frequency. In none of these reports has there actually been a description of a case involving urinary difficulty. I recently saw a patient whose reaction to tripelennamine involved the urinary tract and was so unusual that it appears worth recording.

### REPORT OF CASE

On Feb. 25, 1949 a white man aged 54 complained of difficult urination of three days' duration. He had been examined periodically, and there was no reason to anticipate the occurrence of the predicament.

Urination was of an obstructive character but was completely painless. Only a dribbling stream was possible. When the urethra was compressed against straining, thereby increasing the bladder pressure, the stream became full for about three seconds; as soon as the pressure reduced itself the dribbling returned.

Except for a mild rash of the face the physical examination, especially of the prostate and external genitalia, revealed essentially normal conditions. Urinalysis was normal, as was the determination of residual urine in the bladder.

In the search for an explanation for the sudden appearance of the complaint it was learned that the rash had been attributed to an allergy and was being treated with vaccine injections plus tripelennamine hydrochloride, 50 mg. tablets four times a day. Therapy had been started on February 22, and the urinary disturbance had developed within twenty-four hours.

Cardiospasm due to this drug had previously been observed; hence, it appeared not unlikely that a similar spasm of the vesical sphincter could occur. The tripelennamine was discontinued, and the urinary symptoms completely abated by the next morning.

To prove the validity of the assumption that the distress was due to the antihistaminic agent, it was planned to attempt to reproduce the condition at a later date. Accordingly, the patient was observed for two months, during which time the rash cleared, all vaccine therapy was discontinued and urinary function remained normal. On May 3, 1949, the patient received 50 mg. of tripelennamine hydrochloride at 7 a. m. and again at noon. At about 4 p. m. the urinary difficulty had reappeared. No more of the drug was administered. The symptoms rapidly subsided, were not present the following morning and have not returned to date. Measurement of residual urine in the bladder on May 11, 1949, was normal.

### COMMENT

Urinary disturbances such as dysuria and frequency have been listed among the side reactions from tripelennamine.[1a] The possible mechanisms through which these may occur have received little attention. Sherrod, Loew and Schloemer,[1b] investigating the pharmacologic properties of diphenhydramine hydrochloride (benadryl®) and tripelennamine hydrochloride on the dog intestine and uterus, found that the two antihistaminic agents had opposite actions. Diphenhydramine produced an antispasmodic effect, but tripelennamine acted as a spasmogenic agent and contracted the duodenum and uterus. The latter action could reasonably explain the gastric symptoms experienced by some patients. Similarly, a spasmogenic effect on the vesical sphincter in the present case could account for the urinary disturbance.

The ease with which the disturbance was reproduced leaves little doubt that tripelennamine was the noxious agent. It was not deemed fair to the patient to subject him to unnecessary and strenuous urologic investigation. However, others may be in an advantageous position in the future to pursue such investigation and derive much information concerning the effect of this agent on the urinary bladder.

### SUMMARY

A case of urinary obstructive symptoms believed to be due to tripelennamine hydrochloride (pyribenzamine®) is reported. The spasmogenic property of the antihistaminic agent indicates its probable relation to the urinary distress.

6333 Wilshire Boulevard (36).

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[1] (*a*) Feinberg, S. M.: Histamine and Antihistaminic Agents: Their Experimental and Therapeutic Status, J. A. M. A. **132**: 702 (Nov. 23) 1946. Kleckner, M. S.: Clinical Appraisal of Benadryl, Pyribenzamine and Anthallan in the Treatment of Allergic Disorders, Ann. Int. Med. **28**: 583 (March) 1948. Loveless, M. H.: Therapeutic and Side Effects of P[illegible] and Benadryl: Comparative Study Based upon a Survey [illegible] iterature, Am. J. Med. **3**: 296 (Sep[illegible] ender, S.: Histamine Antagonists: [illegible] ylenediamine (Pyribenzamine) [illegible] Treatment of Allergic Manifestations, Am. J. M. Sc. [illegible] *b*) Sherrod, T. R.; Loew, E. R., and Schloemer, [illegible] Properties of Antihistamine Drugs, Benadryl, Pyribenzamine and Neoantergan, *J. Pharmacol. & Exper. Therap.* **89**: 247 (March) 1947. (*c*) Blanton, W. B., and Owens, M. E. B., Jr.: Granulocytopenia Due Probably to Pyribenzamine, J. A. M. A. **134**: 454 (May 31) 1947. Epstein, E.: Dermatitis Occurring During Therapy with Tripelennamine Hydrochloride ("Pyribenzamine Hydrochloride"), ibid. **134**: 782 (June 28) 1947. Harris, M. C., and Shure, N.: Eczematoid Dermatitis Following Ingestion of "Pyribenzamine Hydrochloride": N.N.R. Tablets, J. Allergy **18**: 408 (Nov.) 1947.

# Council on Physical Medicine and Rehabilitation

## REPORTS OF THE COUNCIL

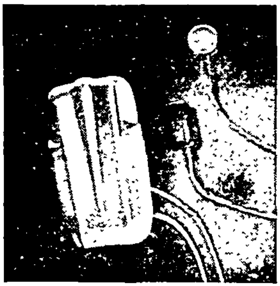
*The Council on Physical Medicine and Rehabilitation has authorized publication of the following reports.*

Howard A. Carter, *Secretary.*

## RADIOEAR PERMO-MAGNETIC HEARING AID (MULTIPOWER MODEL) ACCEPTABLE

Manufacturer: E. A. Myers and Sons, Radioear Building, 306-08 Beverly Road, Mt. Lebanon, Pittsburgh 16.

The Radioear Multipower Electronic three tube hearing aid is a two piece instrument consisting of amplifier case with separate batteries. The case is constructed of either smooth ivory or black plastic material. A magnetic type microphone and magnetic air and bone conduction receivers are utilized in the construction of the instrument. Sound pressure variations reach the magnetic microphone diaphragm through recessed louvers on the sides of the upper part of the case. This instrument is equipped with a "Phonemaster" coil with which voice signals from the telephone may be picked up inductively, amplified through the instrument, and reproduced in either the air or bone conduction receiver. A wheel type combination "on-off" switch and volume control is located at the top of the case. A "Noisemaster" switch is located on one side of the case which attenuates the high and low frequency ends of the sound spectrum simultaneously for use in noisy environments if desired. The frequency response of the microphone also can be varied by opening or closing a small hole with a screw in the microphone housing within the amplifier case. Three position, separate "Hi" and "Lo" tone controls are accessible within the interior of the amplifier case. A "Powerizer" switch by means of which the maximum gain of the instrument can be controlled over a 15 decibel level if desired also is accessible from the interior of the case. A wide range of B battery voltages and of A and B battery size may be used with this instrument.



Radioear Permo-Magnetic (Multipower) Hearing Aid

*Case Dimensions.*—106 by 60 by 25 mm. (4 3/16 by 2 3/8 by 31/32 inch).

*Case Weight,* including cords and A.C. receiver but less batteries.—170 Gm. (6 ounces).

The following table states the battery drain measured on an instrument equipped with a no. 507 type output tube:

| Battery Drain | Measured Voltage | Measured Current Milliamperes |
|---|---|---|
| A, zinc and carbon, 1.5 volts | 1.3 | 60 |
| B, zinc and carbon, 15 volts | 14 | 0.19 |
| B, zinc and carbon, 22.5 volts | 21 | 0.38 |
| B, zinc and carbon, 33 volts | 31 | 0.66 |
| B, zinc and carbon, 45 volts | 43 | 1.02 |

The instrument can also be fitted with a no. 522 output tube that results in a total filament drain of only 40 milliamperes and whose "B" battery drain is roughly two thirds of the values given in the table.

| Acoustical gain for pure tones: | 250 | 500 | 1,000 | 2,000 | 3,000 | 4,000 | cycles |
|---|---|---|---|---|---|---|---|
| Maximum gain, air conduction | 40 | 50 | 62 | 70 | 70 | 40 | decibel |

(The preceding measurements were obtained with the Powerizer set at plus 15, both tone controls at plus and a 43 volt B battery).

*Acoustic Gain for Speech.*—Two experienced adult hearing aid users, each with predominantly middle ear impairments of approximately 50 db., each perceived speech at a 50 db. lower level by air conduction and 42 db. lower level by bone conduction as measured with a speech audiometer. (Note: the above does not necessarily indicate the maximum acoustical gain for air conduction. Patients with greater air conduction losses than the ones available to the referee would be needed for such a speech test with this instrument).

*Evaluation.*—The Radioear Multipower Permo-Magnetic Hearing Aid is a well constructed instrument with several features of value to hearing aid users. The "Phonemaster" permits the reproduction of telephone speech at least 15 decibels higher level in the hearing aid receiver than that in a telephone receiver. The "Powerizer" reduces the gain approximately 15 decibels if desired, and the use of different B battery voltages permits any desired power output up to the maximum attainable with the 45 volt B battery. The "Noisemaster" attenuates frequencies below approximately 1,000 cycles and above approximately 2,000 cycles for use in noisy environments if desired. The separate "Hi" and "Lo" frequency adjustments plus the adjustment of the frequency response screw on the microphone case permit a very flexible control of the frequency response of the instrument.

The Council on Physical Medicine and Rehabilitation voted to include the Radioear Permo-Magnetic Hearing Aid, Multipower Model, in its list of accepted devices.

## RV 6-WATT PORTABLE BLACK LIGHT ACCEPTABLE

Manufacturer: Vogel Luminescence Corp., 260 Napoleon Street, San Francisco 24.

The RV 6-Watt Portable Black Light is a convenient source of ultraviolet light for diagnostic purposes, such as the inspection of the scalp for tinea capitis. It consists of a standard General Electric 6 watt, 360 BL fluorescent lamp, mounted in a housing, 6.4 by 6.4 by 23 cm. (2½ by 2½ by 9 inches), and weighing about 1 Kg. (2¼ pounds). The shipping weight is 1.1 Kg. (2½ pounds). It can be operated only on 60 cycle, 110-120 volt alternating current. For D.C. or 50 cycle operation special equipment is needed. Through a long, flexible conducting wire the device can be connected to any standard electric wall outlet. The rated life is stated to be from 1,000 to 2,000 hours, depending on the number of starts.

The source of ultraviolet is a glass tube, lined with a thin coating of 360 BL powder which is excited to light emission by a low pressure mercury arc discharge, principally by wavelength 2537A. This powder has the property of emitting ultraviolet radiation in the band of wavelengths extending from about 3,000 angstroms to 4,200 angstroms in the visible spectrum. The unwanted visible light from this source is removed by surrounding the fluorescent glass tube with a tubular Corning red-purple glass filter no. 5874 that transmits about 70 per cent of the 3,660 angstrom emission, which is the most effective band of wavelengths for exciting fluorescence of objects as in the identification of minerals and the examination of the scalp.

Radiometric measurements, made in a laboratory acceptable to the Council, of the radiation of all wavelengths extending from 3,000 to 4,200 angstroms indicated a radiant flux density (intensity) of 9.26 milliwatts per square centimeter at 17 inches and 3.40 milliwatts per square centimeter at 40 inches from the front of the lamp. Covered with the Corning filter, the intensity in the waveband at 3,660 angstroms is much lower, but as used close to an object under examination the intensity is sufficient.

In addition to the aforementioned laboratory tests, the specimen was subjected to practical clinical trials. Satisfactory evidence of dependability and usefulness was obtained.

The Council on Physical Medicine and Rehabilitation voted to include the RV 6-Watt Portable Black Light in its list of accepted devices.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 16, 1949

## THE PRINCIPLES OF ETHICS OF THE AMERICAN MEDICAL ASSOCIATION

Almost unnoticed in the midst of the startling developments of the Atlantic City Session was the presentation by the Judicial Council to the House of Delegates of a restatement and revision of the Principles of Medical Ethics. This statement was promptly adopted by the House of Delegates. Comparison will indicate the additions and changes that have been made in content and in manner of statement. Among the most significant changes are those relating to groups and clinics, including contract practice, the section on educational information and the section on the purveyal of medical service.

The report of the Committee on Hospitals and the Practice of Medicine took its guidance from the Principles of Medical Ethics as last revised in 1940 rather than from the new statement which was adopted in this 1949 Session. No doubt further considerations by this committee in the period between now and the Clinical Session of the Association which will be held in December will result in coordination of these actions.

In the case of the Government versus the American Medical Association tried in Washington in 1941, the courts took cognizance of the Principles of Medical Ethics as a guide to physicians in relationship to the adoption of any methods of medical practice. The Court recognized that members of the American Medical Association voluntarily subjected themselves to the stipulations of the constitution and by-laws of county and state societies, of the American Medical Association and also to the Principles of Medical Ethics.

The statements now prevailing permit experimentation with changes in the method of medical practice beyond some restrictions which prevailed formerly. No doubt the Judicial Council will have opportunity to interpret the statements now made in relation to specific incidents as these arise. Ethics as stated in the introduction to the principles "are not laws to govern but are principles to guide to correct conduct." "An upright man, instructed in the art of healing" seldom needs to refer to the Principles of Medical Ethics in making his decisions as to the manner in which he conducts his practice and his life.

The fundamental principle that the physician shall not dispose of his professional attainments or services under terms or conditions which permit exploitation of the services for the financial profit of a corporation or lay agency still obtains. The only type of contract practice specifically condemned is that which may result in deterioration of the quality of the medical services rendered.

Instances have occurred in which physicians, for political, commercial or emotional reasons, have endeavored to utilize the Principles of Medical Ethics as a means of producing embarrassment, distress or loss of reputation of other physicians whom they envy or whose open competition they fear. The Principles of Medical Ethics were not designed for any such purpose, and the attempt to utilize the principles of ethics for such purposes may well be in itself unethical.

Shortly the Principles of Medical Ethics will become available in the form of a newly designed booklet, which may be secured from the office of Secretary George F. Lull. Physicians should become familiar with the principles, since raising the moral standard of the medical profession is one of the fundamental aims of the American Medical Association.

## ACTIONS OF THE HOUSE OF DELEGATES

Several decisions of the House of Delegates in Atlantic City will affect the practice of the physician and the medical care of the people of the United States.

Resolutions brought before the House of Delegates and reports of boards, councils and committees are referred by the speaker of the House to an appropriate reference committee, which in turn brings its report to the House for ratification. The House of Delegates may then accept the report, reject it or amend it. Those interested in the ultimate actions of the House of Delegates will do well, therefore, to begin with the reports of the reference committees and refer back to the resolutions concerned.

### Fees for Insurance Examinations

More than 95 per cent of the $13,000,000 paid by life insurance companies to practicing physicians in 1948 was for examinations. The Bureau of Medical Economic Research made a study of the problem supplemented by a survey which was conducted under the auspices of the Association of Life Insurance Medical Directors. The reference committee to which this report was referred suggested that it be sent to the secretaries of the constituent associations for study.

### Hospitals and the Practice of Medicine

The Committee on Hospitals and the Practice of Medicine presented to the House of Delegates a consideration of the corporate practice of medicine with the conclusion that it is illegal, with some minor exceptions, and unethical for any lay corporation to practice medicine and to furnish medical services for a professional fee, which shall be so divided as to produce profit for a lay employer, either individual or institutional. This statement, which went to the reference committee on the Report of the Board of Trustees, brought forth the view that hospital service plans shall provide payment for hospital services only and that medical service plans shall supply payment for all medical services, including pathologic, roentgenologic, anesthesiologic and physical therapeutic services. Every physician on the appointed staff of a hospital, the committee believed, should have a voice in its professional management. The conclusion was that most controversies between management and the professional staff should be settled on local levels and that every constituent state and territorial society should appoint a committee on hospital and professional relations. The reference committee said that it was within the power of the Judicial Council to find a hospital or lay group guilty of violating the Principles of Ethics and recommended that the Judicial Council order the withdrawal of the Association's approval of a hospital which did not comply.

### Prepayment Medical Care

The Council on Medical Service, recognizing the great progress made in voluntary prepayment medical and hospital care plans, reported that the American Medical Association is not engaged in the insurance business and has no intention of giving a preferential standing to any one type of voluntary plan. The Association does, however, evaluate insurance plans with a view to protecting people against unscrupulous or unsound plans.

The Council on Medical Service recommended the formation of a national coordinating agency to represent all qualified voluntary prepayment plans. The Council recommended that there should be no official connection between the American Medical Association and the Associated Medical Care Plans, but that Associated Medical Care Plans should be recognized as a trade organization of member plans and the Blue Cross as a similar trade organization for the voluntary hospital care plans.

The Council feels that the function of the American Medical Association is to promote the principle of voluntary insurance by education and to inform the American people of the availability of approved plans. The Council on Medical Service also recommended twenty principles for lay-sponsored voluntary health plans, indicating its belief that these should comply with the Principles of Ethics of the American Medical Association and be adequately financed. Under these principles promotion, sales, organization and administrative expense must be kept at a minimum and the quality of the medical service must be maintained at the highest possible level. The twenty points, which were published in THE JOURNAL, June 25, page 686, indicate that the plans shall provide for services by duly licensed physicians only and that those practicing specialties shall be required to have adequate qualifications for the specialties. The promotional material is not to invite attention to the professional skill, qualifications or attainments of participating physicians. The methods of payment of the physicians shall not be contrary to the Principles of Ethics. Any plan desiring approval is to agree to periodic reviews and to abide by such regulations as may be deemed necessary by the appropriate accrediting body of the American Medical Association. This report was referred to a reference committee on insurance plans, which pointed out that the twenty points had been tentatively initiated jointly by representatives of the Council on Medical Service and the Cooperative Health Federation of America. The reference committee added as a final criterion the recommendation that "any lay-sponsored plan desiring approval by a proper accrediting body of the American Medical Association shall come bearing the endorsement of the state or county medical association involved."

### Health Plan for the United States

A resolution was proposed offering a health plan for the United States with ten major points, and the reference committee indicated that this was a matter for study by the Council on Medical Service.

### Classification of Medical Schools

The Council on Medical Education and Hospitals requested approval by the House of Delegates of a consideration of foreign medical schools with a view to aiding state licensing boards in establishing their policies with respect to licensure of foreign graduates. The Council on Medical Education and Hospitals also submitted to the House of Delegates some new standards for residency training in physical medicine and rehabilitation and indicated that it had approved the newly formed American Board of Preventive Medicine and Public Health. The reference committee recommended adoption of the report of the Council on Medical Education and Hospitals.

Many resolutions on medical education were introduced by delegates from various states. The reference committee took action, which was supported by the House of Delegates, leading to the following procedures: (1) graduate and postgraduate education for general practitioners should be made more widely available; (2) two year rotating internships should be especially designed for those who wish to train for general practice, and (3) the American Medical Association should most urgently insist that hospitals make freely available to qualified general practitioners all their facilities for the care of the sick.

The committee recommended that a committee of five members of the House of Delegates, two of whom shall be general practitioners, be established to study the whole internship problem and especially to study the advisability of recommending the two year rotating internship. Finally the committee recommended the adoption of a resolution to the intent that the Council on Medical Education and Hospitals shall extend its inspection service to all hospitals, recognizing, however, while the objective is desirable, that the performance may be beyond the scope of the Council.

### *Possible Increase in Dues and Assessments*

An attempt was made to establish dues in the American Medical Association and to provide for further assessments, but the House of Delegates advised study by the Board of Trustees and delay in action until the Interim Session.

### Displaced Physicians

A resolution urging cooperation of the American Medical Association through appointment of a committee to study the problem of displaced physicians in cooperation with other agencies that have this problem as one of their functions was approved, if feasible.

Another resolution urging the appointment of a special committee to work on the problem of displaced physicians was referred to the Board of Trustees for their disposition.

### General Practitioner's Award

A resolution was introduced suggesting the abandonment of the annual award of a medal to a leading general practitioner. The House of Delegates, however, decided to continue this award.

### Emergency Medical Service

Congratulations are due the Council on National Emergency Medical Service, which apparently has functioned successfully to secure the establishment of a civilian physician at an important level in the office of the Secretary of Defense. Dr. Raymond B. Allen, present president of the University of Washington, will occupy the position for three months and will be succeeded by Dr. Richard L. Meiling of Columbus, Ohio, who has devoted himself with great personal sacrifice to the work of this Council.

### A.M.A. Hearings on Taft and Hill Bills

Resolutions were offered expressing the attitude of the American Medical Association toward the legislation proposed in the United States Senate by Senator Hill and Senator Taft offering proposals for the extension of medical care. The reference committee recommended that the resolutions be committed to the Board of Trustees with a request that it fix a day on which it will hold hearings on the resolutions at which any person may appear to present his views. The resolutions in question came from the delegates of the state of Pennsylvania.

## Current Comment

### HEARINGS ON HEALTH LEGISLATION

With the beginning of the recent hearings on health legislation by the Subcommittee on Health of the Committee on Labor and Public Welfare, the importance of the situation and general medical interest seemed to warrant a full report in The Journal such as has been included for previous hearings. However, both legislators and the medical profession seem to have lost much of their interest in these hearings, and reports indicate that hardly a visitor attended the hearings during the last three or four weeks before they were adjourned. Accordingly, The Journal discontinues the publication of the condensation of the hearings. Those who are especially interested may obtain the full reports which will no doubt be made available as in the past by the Government Printing Office. Copies may also be obtained through the Washington office through Dr. Joseph S. Lawrence, 1302-18th Street, N.W., Washington 6, D. C.

### CARE SENDS BOOKS

The Cooperative for American Remittances to Europe has now undertaken a new function which is of great interest to the medical profession. The program is designed to replenish the shelves of libraries in professional schools and other libraries abroad with gifts of new American technical and scientific books. Cooperating in the plan are the United States Commission for UNESCO, the Library of Congress, the American Library Association and the United States Book Exchange. The Board of Trustees of the American Medical Association has also approved the project and expresses the hope that physicians will contribute to CARE[1] for this purpose. A distinguished group of American physicians has been appointed to select the books that are best suited to the purpose, and American medical publishers are cooperating by making the best possible price on the books selected. The bibliography committee is headed by Dr. Luther Evans, who is librarian of Congress. Only new books will be sent; used books cannot be accepted. All books will be in the English language. Incidentally, 85 per cent of requests for scientific and technical books received by UNESCO are for books printed in English. Donors of $10 or more may designate the country, the institution or the category of books to be sent. They will receive from the foreign recipient a letter acknowledging receipt of the gift; gifts of less than $10 will be pooled in a general book relief fund, and donors will receive an acknowledgment but not a receipt signed by the recipient.

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[1] CARE headquarters are at 20 Broad Street, New York 5.

# ORGANIZATION SECTION

## *Official Notes*

### THE SCIENTIFIC EXHIBIT, WASHINGTON, D. C., SESSION, DEC. 6-9, 1949

Application blanks for space in the Scientific Exhibit at the Washington Session, Dec. 6-9, 1949, are now available. The meeting is intended primarily for physicians in general practice and will consist of clinical presentations accompanied with exhibits of practical interest:

The Scientific Exhibit will include many exhibits with active demonstrations.

Application blanks may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn St., Chicago 10, Ill.

COMMITTEE ON SCIENTIFIC EXHIBIT
DWIGHT H. MURRAY, *Chairman.*
E. J. MCCORMICK.
F. J. L. BLASINGAME.

### REVISED EDITION OF MOTION PICTURE REVIEWS NOW AVAILABLE

The Committee on Medical Motion Pictures has completed the first revised edition of the booklet entitled "Reviews of Medical Motion Pictures." It now contains all the film reviews published in THE JOURNAL to Jan. 1, 1949. It also includes a classified table of contents as well as a list of motion pictures available through the Motion Picture Library, American Medical Association.

The purpose of the reviews is to provide a brief description and evaluation of motion pictures which are available to the medical profession. Each film is reviewed and commented on by competent authorities.

One copy has been mailed to the secretary of each county and state medical society. Additional copies are available on request from the Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10.

## *Woman's Auxiliary*

The twenty-sixth annual meeting of the Woman's Auxiliary held in Atlantic City, N. J., June 6-10, 1949, was an outstanding success both from the point of view of attendance and program. The registration was 1,583. Proceedings of the convention will be published in the August 1949 *Bulletin.*

### NATIONAL OFFICERS AND CHAIRMEN

National officers and chairmen of standing committees for 1949-1950 are as follows:

President—Mrs. David B. Allman, 104 St. Charles Place, Atlantic City, N. J.
President-Elect—Mrs. Arthur A. Herold, 731 Oneonta Street, Shreveport, La.
Vice Presidents
  First—Mrs. Harold F. Wahlquist, 129 W. 48th Street, Minneapolis.
  Second—Mrs. Henry Garnjobst, 508 Jefferson St., Corvallis, Ore.
  Third—Mrs. W. E. Hoffman, 4000 Noyes Ave., S.E., Charleston 5, W. Va.
  Fourth—Mrs. Mason G. Lawson, 200 Ridgeway, Little Rock, Ark.
Treasurer—Mrs. George Turner, 3009 Silver St., El Paso, Texas.
Constitutional Secretary—Mrs. Harry M. Gilkey, 4941 Westwood Road, Kansas City, Mo.
Directors:
  One year
    Mrs. Luther H. Kice, 95 Brook St., Garden City, Long Island, N. Y.
    Mrs. James P. Simonds, 2033 W. Morse Ave., Chicago 45.
    Mrs. Jesse D. Hamer, 1819 N. 11th Ave., Phoenix, Ariz.
    Mrs. Leo J. Schaefer, 700 Highland, Salina, Kan.
  Two years
    Mrs. Scott C. Applewhite, 240 Bushnell St., San Antonio 2, Texas.
    Mrs. Ralph Eusden, 4360 Myrtle Ave., Long Beach 7, Calif.
    Mrs. William W. Potter, 129 Kenesaw Terrace, Knoxville, Tenn.
Chairmen of standing committees
  Finance—Mrs. Scott C. Applewhite, 240 Bushnell St., San Antonio 2, Texas.
  Hygeia—Mrs. Herbert W. Johnson, 741 Grand Ave., Everett, Wash.
  Legislation—Mrs. Bruce Schaefer, 110 Whitman St., Toccoa, Ga.
  Organization—Mrs. Harold F. Wahlquist, 129 W. 48th St., Minneapolis.
  Program—Mrs. Leo J. Schaefer, 700 Highland, Salina, Kan.
  Publications—Mrs. James P. Simonds, 2033 W. Morse Ave., Chicago 45.
  Public Relations—Mrs. Paul C. Craig, 232 N. Fifth Street, Reading, Pa.
  Revisions—Mrs. Eustace A. Allen, 18 Collier Road, N.W., Atlanta, Ga.
Special Committee
  Reference—Mrs. Rollo K. Packard, 14093 Davana Ter., Sherman Oaks, Calif.
Historian—Mrs. Jesse D. Hamer, 1819 N. 11th Ave., Phoenix, Ariz.
Parliamentarian—Mrs. William E. Dodd, Bay Avenue and Ocean St., Beach Haven, N. J.

### REVISIONS

The revisions to the by-laws, which accompanied the call to meeting and were published in the *Bulletin,* were presented to the House of Delegates. The action taken was that they be tabled indefinitely.

### RESOLUTIONS

Three resolutions were adopted by the House of Delegates: (1) That the Woman's Auxiliary adopt the American Medical Association 12 point program as a part of the Auxiliary program; (2) in memory of three deceased past national presidents, Mrs. James Blake, Mrs. Robert W. Tomlinson and Mrs. Franklin Gengenbach; (3) re: approval of voluntary prepayment medical insurance.

### MEMBERSHIP

Membership of the Auxiliary as of June, 1949, as reported by the Organization Committee, is 48,659, an increase of 6,237 members over last year.

### BUDGET

The budget for the year 1949-1950 of $34,493 was approved. It will be published in detail in the *Bulletin.*

### "THE DOCTOR'S WIFE"

Plans for the new magazine to be published by A. M. A. for the Woman's Auxiliary have been postponed indefinitely.

### THE BULLETIN

The Board of Directors recommended that all state and county presidents be requested to appoint county and state *Bulletin* chairmen, and to use their influence in stimulating interest in the Auxiliary official publication. It was suggested that every working member be urged to subscribe. The rate is $1 per year for four issues. Subscription blanks and information will be forwarded to state *Bulletin* chairmen from the Auxiliary office shortly.

### "THE DOCTOR"

Copies of "The Doctor," by Sir Luke Fildes, are being sent to the members of the American Medical Association on request. Whitaker and Baxter, directors of the A. M. A. National Education Campaign, have solicited the aid of the members of the Woman's Auxiliary in seeing to it that these pictures are hung in every doctor's office, preferably framed.

### 1949 CONFERENCE

The 1949 Conference of State Presidents and Presidents-Elect and the National Chairmen of Standing Committees will be held in Chicago, Nov. 3-4, 1949 at the Hotel LaSalle. Detailed information will be forwarded at a later date.

### COMING MEETINGS

American Medical Association House of Delegates Interim Session, Washington, D. C., Dec. 6-9, 1949. American Medical Association Annual Meeting, San Francisco, June 26-30, 1950.

### LISTS OF STATE OFFICERS AND CHAIRMEN

The executive secretary would appreciate the state presidents' forwarding names and addresses of the state officers and chairmen of standing committees as soon as such names are available. Programs of the national chairmen will be ready for distribution shortly.

MARGARET N. WOLFE, *Executive Secretary.*

# Washington Letter

*(From Our Regular Correspondent)*

July 11, 1949.

### House Hearings

Five weeks of public hearings on national health legislation were ended on June 29 by the Murray subcommittee of the Senate Labor and Public Welfare Committee. Those which have been conducted since May 20 by the Priest subcommittee of the House Interstate and Foreign Commerce Committee are continuing, with likelihood that they will not be terminated before the summer adjournment of Congress.

In the course of its three final sessions, on June 27, 28 and 29, the Senate subcommittee heard additional testimony in opposition to and support of compulsory health insurance and in support of the Flanders-Herter bill (S. 1970) on federal-state subsidization of voluntary prepayment plans. Other witnesses urged that greater recognition be given, in whatever legislation may be enacted, to the osteopathic and chiropody professions.

Meantime, the Priest subcommittee was gathering statements and oral testimony on Title III of the Thomas-Murray-Dingell bill (S. 1679), along with numerous independent bills, all relating to expansion of the Hill-Burton hospital survey and construction act. The majority of the witnesses were members of Congress seeking maximum benefits for hospital projects in their various states.

Its hearings now terminated, the Murray subcommittee is now engaged in redrafting certain health legislation, with the view of having it enacted in the final weeks of this first session of the 81st Congress. In the forefront are bills providing for government assistance to medical, dental and nursing education, to local public health units and to states requiring financial aid for enlarging hospital systems. These are relatively noncontroversial issues, and strong effort will be made to have such steps made into law before adjournment.

### Senator Murray Attacks Dr. Hawley on Kaiser-Permanente

A statement of opinion by Dr. Paul R. Hawley, to the effect that he does not care for Henry J. Kaiser's medical care system on the West Coast, has been made the vehicle for Senator James E. Murray's latest attack on American medicine. On July 6 he obtained Senate consent to introduce into the Congressional Record a three page statement criticizing Dr. Hawley, who is not named, plus a lengthy letter from Mr. Kaiser and an accompanying brochure describing the Permanente Health Plan sponsored by the industrialist.

In the course of interrogation by Senator Murray when Dr. Hawley testified before the Senate health subcommittee on May 31, the latter stated that the Kaiser system of salaried medical staffs is not good. The subcommittee chairman subsequently relayed Dr. Hawley's observation to Mr. Kaiser and solicited a reply. In his response, Mr. Kaiser cited the growth of the Permanente system in San Francisco, Oakland, Portland and other West Coast cities, making no reference to the opinion expressed by the executive officer of Blue Shield and Blue Cross.

Senator Murray's ensuing statement extolled the Kaiser-Permanente Plan, which he likened to the Mayo and Lahey Clinics. These are superior, he said, to "medical society health plans (which) offer absolutely no assurances of quality medical care." Noting that Mr. Kaiser opposes compulsory health insurance and favors group practice, prepayment plans instead, Senator Murray went on to say that health insurance is essential, nevertheless, to guarantee the launching and successful development of such enterprises.

### "Who's Who in World Medicine" Curbed by U. S.

Federal Trade Commission has clamped down on the advertising promotion of "International Who's Who in World Medicine," entering into stipulations with its publisher which will result in certain practices' being eliminated, according to an official announcement by FTC headquarters. One is discontinuance of "American Universities" in the publisher's corporate name—"American Universities Medical Research Publications, Inc."—inasmuch as "there are no universities in America that are financially interested in or that participate in the preparation of their publications." Another stipulation is that the company shall stop representing that "International Who's Who in World Medicine" is predominantly comprised of biographic sketches of living persons who are prominent in world medicine.

### Chiropractic in Veterans Administration Opposed

Officials of the Veterans Administration voiced emphatic objection to proposed legislation (S. 2025) authorizing appointment of chiropractors to VA's department of medicine and surgery at a public hearing July 6. The hearing was conducted by a special subcommittee, headed by Senator Claude Pepper, of the Senate Labor and Public Welfare Committee. Dr. H. A. Press, assistant to Chief Medical Director Paul B. Magnuson, informed the subcommittee there is no atomic or physiologic basis for chiropractic and pointed out that its dubious educational system stands in sharp contrast to the high professional training standards of medicine and osteopathy.

Testifying in support of the bill were Omar B. Ketchum, of Veterans of Foreign Wars; Charles Foster, of Disabled American Veterans, and John G. Nugent, of New Haven, Conn., representing National Chiropractic Association.

# Medical Legislation

## STATE LEGISLATION

### California

**Bills Introduced.**—H. Res. 237 proposes the creation of a commission to ascertain, study and analyze all facts relating to or in any way bearing on **public health** and to report back to the general assembly its recommendations for appropriate legislation. A. 3174 proposes an appropriation of $50,000 for research leading to the treatment and cure of **multiple sclerosis.**

**Bills Enacted.**—A. 771 has become chapter 546 of the Laws of 1949. It provides that no person, association or corporation shall maintain or conduct any institution, boarding home or other place for the reception or care of aged persons without a **written license** from the State Department of Social Welfare. A. 1954 has become chapter 722 of the Laws of 1949. It amends the Health and Safety Code **defining "biologics"** by including whole blood and blood derivatives and also preparations made from human as well as animal tissues or micro-organisms. S. 817 has become chapter 530 of the Laws of 1949. It amends the Business and Professions Code by providing, among other things, that nothing shall prohibit the board of medical examiners from disapproving any **foreign medical school** or from denying the application of such school if, in the opinion of the board, the instruction received by the applicant or the courses were not equivalent to that required in the California provisions relating to the licensing of physicians and surgeons.

### New Jersey

**Bill Enacted.**—A. 511 has become chapter 196 of the Laws of 1949. It authorizes a local board of health to quarantine any person afflicted with **tuberculosis of the lungs** in a communicable form, diagnosed as such by a licensed physician after examination by roentgenogram or finding of tubercle bacilli in the sputum or gastric washings, in order to protect others from becoming infected.

# Coming Medical Meetings

Aero Medical Association, New York, Aug. 29-Sept. 2. Dr. Thomas H. Sutherland, 214 S. State St., Marion, Ohio, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., The Homestead, Sept. 8-10. Dr. Leroy A. Calkins, University of Kansas Medical Center, Kansas City 3, Kan., Secretary.

American Congress of Physical Medicine, Cincinnati, Netherlands Plaza Hotel, Sept. 6-10. Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secretary.

American Roentgen Ray Society, Cincinnati, Sept. 4-7. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Iowa, Secretary.

International Congress of Biochemistry, Cambridge, England, Aug. 19-25. Lt. Col. Francis J. Griffin, 56 Victoria St., London, W.C.1, Organizer.

Montana State Medical Association, Butte, Aug. 1-4. Dr. Herbert T. Caraway, 115 N. 28th St., Billings, Secretary.

Utah State Medical Association, Salt Lake City, Sept. 1-3. Dr. Ray T. Woolsey, 42 S. Fifth East St., Salt Lake City 2, Secretary.

Vermont State Medical Society, Burlington, Sept. 1-2. Dr. James P. Hammond, 542 Main St., Bennington, Secretary.

West Virginia State Medical Association, White Sulphur Springs, The Greenbrier, Aug. 4-6. Mr. Charles Lively, 1031 Quarrier St., Charleston, Executive Secretary.

# GOVERNMENT SERVICES

## ARMY

### BEGIN JOINT STAFFING OF NAVAL HOSPITALS

Joint staffing of four Naval hospitals with Army medical personnel at St. Alban's Hospital, Long Island, N. Y.; Corona and Long Beach hospitals, California, and Portsmouth Hospital, Portsmouth, Va., was announced July 1 by the Surgeon General. The joint staffing of military hospitals was recommended by the Hawley Board last January in order to economize on physicians and other scarce professional personnel and to reduce the number of hospitals. Under the plan, hospitals of the respective services allocate a certain number of beds for patients from other services. A total of 825 beds has thus been made available in these four hospitals for Army and Air Force patients.

Nine Army Medical Corps officers, including a pediatrician, an internist, a general surgeon, an orthopedic surgeon and five general duty physicians, are being assigned to St. Alban's Hospital, which has allocated 450 beds to Army and Air Force patients. Allocation of these beds made it possible for the Army to close Fort Totten General Hospital, Long Island, and to reduce Tilton General Hospital, Fort Dix., N. J., to station hospital status, effective June 30. Three Army Medical Corps officers in residency training have been assigned to Portsmouth Naval Hospital, which has allocated 100 beds to the Army and Air Force. At Corona and Long Beach hospitals, a total of 300 beds have been turned over to the Army and Air Force, making it possible to close McCormack General Hospital by June 30. An internist, a general surgeon and a general duty physician are being assigned to each of these hospitals by the Army Medical Department. Members of the Dental Corps, Army Nurse Corps, Medical Service Corps and Women's Specialist Corps and enlisted personnel are being assigned to these hospitals in proportionate numbers to help with the work load of all patients and augment the hospital staff.

In a similar joint staffing procedure, the Navy recently assigned personnel for duty at the Army's Tripler General Hospital at Honololul, Hawaii, where all Naval patients in the Philippine Island are now hospitalized.

### SELECT 486 NEW DOCTORS FOR INTERN TRAINING

The Surgeon General announced that a total of 486 medical school graduates and senior medical students were selected for the military intern and civilian intern programs and began their internships and training July 1. Commissions as first lieutenants in the Medical Corps Reserve have been given to 231 medical school graduates who were assigned to Army general hospitals taking part in the military intern program. These internships are offered each year to selected graduates of medical schools approved by the American Medical Association. Appointments begin on July 1 and terminate June 30 the following year. Commissions in the Regular Army are tendered to some at the close of the year. Twenty-four of those selected for the military intern program formerly held Reserve Corps rank in the Army, Navy or Air Force.

Selected for commissions as first lieutenants in the Medical Corps Reserve and assignment to civilian hospitals for intern training in the civilian intern program beginning July 1 are 255 medical school senior students. This program is designed primarily for young physicians who desire a career in the Regular Army Medical Corps. Applicants must have been accepted for internship training in a civilian hospital approved by the American Medical Association. Physicians selected for training under this program are required to serve two years on a duty status on completion of their year of intern training. During this year of training they are officers on active duty with full pay and allowances of the grade of first lieutenant.

### TRIPLER GENERAL HOSPITAL WELCOMES THE NAVY

The May 9 issue of *The Caducean,* which is published at Tripler General Hospital in Honolulu, is devoted largely to welcoming the Navy medical contingents and personnel to that new hospital in one phase of the unification of the medical service of the armed forces. When the transfer from the Aiea Naval Hospital is complete, the Navy will have on duty at the new Tripler Hospital, which heretofore has been exclusively an Army hospital, ten Navy medical officers, 35 Navy nurses, 125 Navy enlisted men; there will be about 300 Navy patients. Tripler thus becomes, in fact, the armed forces hospital for the Hawaiian area, serving personnel of the Army, Navy, Air Force, Marine Corps and Coast Guard; it will also care for island veterans and patients of the United States Public Health Service. The first Navy medical officer to be in charge of the Naval unit at Tripler is Captain Gordon Tayloe, M.C., whose distinguished career began when he enlisted in the Navy Hospital Corps in 1917. Following World War I, he went to Wake Forest College in North Carolina, then to the University of Maryland School of Medicine in Baltimore, where he graduated in 1937. Much of his service during World War II was in Central and Eastern China. Captain Tayloe organized the Medical Department for the Navy Corps in China, including twenty-four small medical dispensaries and three mobile field hospitals; for this service he was awarded the Legion of Merit.

### SELECTED FOR ADVANCED TRAINING

The following additional medical officers have been selected for advanced training in civilian institutions:

Colonel Arthur E. White, American Congress of Physical Medicine, Chicago, physical medicine

Colonel Harold B. Luscombe, American Congress of Physical Medicine, Chicago, physical medicine

Colonel Emmett M. Smith, American Congress of Physical Medicine, Chicago, physical medicine

Colonel Harold E. Coder, University of California, Berkeley, Calif., hospital administration

Lt. Colonel Frank W. Threadgill, University of California, Berkeley, Calif., hospital administration

Lt. Colonel James H. Gordon, University of California, Berkeley, Calif., public health

Lt. Colonel Lucio E. Catto, Philadelphia Psychoanalytic Institute, Philadelphia, psychoanalysis

Lt. Colonel James E. Tate, American Congress of Physical Medicine, Chicago, physical medicine

Lt. Colonel Clark B. Williams, American Congress of Physical Medicine, Chicago, physical medicine

Lt. Colonel John J. Marren, University of California, San Francisco, psychiatry and neurology

Major George W. Geiss, American Congress of Physical Medicine, Chicago, physical medicine

Major Joseph N. Schaeffer, American Congress of Physical Medicine, Chicago, physical medicine

Captain Donald W. S. Stiff, Massachusetts General Hospital, Boston, residency in radiology

Captain Irvine G. Jordan Jr., Tulane University Medical School, New Orleans, basic sciences, and Ochsner Clinic, New Orleans, orthopedic surgery

Captain Wayne R. Celhafen, American Congress of Physical Medicine, Chicago, physical medicine

Captain Edward J. Lorenze, American Congress of Physical Medicine, Chicago, physical medicine

Captain James S. Martin, American Congress of Physical Medicine, Chicago, physical medicine

First Lt. John H. Webb Jr., Grady Memorial Hospital, Atlanta, Ga., otorhinolaryngology

First Lt. Edward E. Mercier, Gallinger Municipal Hospital, Washington, D. C., residency in medicine, and Georgetown University Hospital, Washington, D. C., internal medicine

First Lt. David H. Nichols, Millard Fillmore Hospital, Buffalo, obstetrics and gynecology

First Lt. Paul Teplis, Grady Memorial Hospital, Atlanta, Ga., and Georgetown University Hospital, Washington, D. C., residency in medicine

First Lt. David C. Wilson Jr., University of Colorado, Denver, residency in psychiatry

First Lt. Frank J. Cozzetto, Colorado General Hospital, Denver, pediatrics

# PUBLIC HEALTH SERVICE

## THOROUGHGOING REORGANIZATION

A reorganization of the U. S. Public Health Service to permit the service to keep pace administratively with developments in the concept of public health, and with advances in public health practice resulting from progress in medical science, has been approved by Surgeon General Scheele. The changes, which bring the organization into closely knit groupings in the respective areas of Public Health Service responsibility were made after a year of study by a special committee on organization. In approving the new structural pattern, Dr. Scheele pointed out that it will enable the service to put forth its best efforts and will make possible more efficient management and direction of the programs authorized by Congress. The reorganization regroups the activities of the service within the framework of the four previously existing bureaus, so that closely related programs are brought together in a single overall administrative unit.

The four bureaus, which, in turn, are comprised of several divisions are: Office of the Surgeon General, Bureau of State Services, Bureau of Medical Services and the National Institutes of Health.

Under the reorganization, activities within the Office of the Surgeon General are limited to the over-all staff or advisory functions of the service. As presently constituted, the Office of the Surgeon General, under the direction of the Deputy Surgeon General, is composed of: Division of Commissioned Officers, Division of Public Health Methods, Office of International Health Relations, Office of Management Services, Office of Personnel, Office of Budget and Finance and Office of Purchase and Supply. The new structural plan brings together in the Bureau of State Services the federal-state and interstate programs of the service. Activities of the bureau are carried on in three branches: (1) Environmental Health Service, comprised of the divisions of Sanitary Engineering, Industrial Hygiene, Water Pollution Control, and the Environmental Health Center at Cincinnati; (2) Personal Health Service, consisting of the divisions of Chronic Disease, Dental Public Health, Tuberculosis, Venereal Disease, and the Communicable Disease Center at Atlanta; (3) Administrative and Staff Services, made up of the Division of State Grants, the National Office of Vital Statistics, and the Offices of Public Health Nursing, Health Education and Administrative Management.

### PERSONAL HEALTH SERVICES

New divisions in the Personal Health Services branch are the divisions of Chronic Disease, which brings together existing programs in these fields into one unit, and Public Dental Health.

Divisions just established or transferred to the Administrative and Staff Services branch of the Bureau of State Services are State Grants, which will coordinate programs of grants-in-aid to States, and the National Office of Vital Statistics.

### MEDICAL SERVICES

The Bureau of Medical Services is concerned with services directed toward remedying individual medical needs and is made up of programs of clinical care, evaluation of the nation's health resources and aid in the construction of hospital facilities.

To facilitate the effective performance of the bureau's functions, the divisions of Dentistry and of Nursing, previously in the Office of the Surgeon General, have been transferred to Medical Services. The Division of Hospital Facilities, which administers the national hospital construction program and which was previously in the Bureau of State Services, has been transferred to Medical Services. A new division, Hospital and Medical Resources, has been established in the bureau to strengthen studies and leadership in developing the medical resources of the nation.

The changes, which were made over a period of many months, were first effected in the National Institutes of Health, where reorganization was completed some time ago. The recently created Institute of Experimental Biology and Medicine and the Microbiological Institute resulted from the integration of several divisions and laboratories into coordinated units. The Mental Health Institute was established through the transfer to the National Institutes of the functions of the Division of Mental Hygiene, previously in the Bureau of Medical Services. Two additional institutes, the National Heart Institute and the Institute of Dental Research, have been established on authorization of the 80th Congress.

### NATIONAL INSTITUTE OF HEALTH

Components of the National Institutes of Health are: Office of the Director, Office of Scientific Reports, Office of Research Planning, Experimental Biology and Medicine Institute, Microbiological Institute, National Cancer Institute, National Heart Institute, National Institute of Dental Research, and National Mental Health Institute.

## REGULAR CORPS EXAMINATION FOR MEDICAL OFFICERS

A competitive examination for appointment of medical officers in the Regular Corps of the United States Public Health Service will be held on October 3-5. Applications must be received no later than September 5.

Appointments will be made in the grades of assistant surgeon (first lieutenant) and senior assistant surgeon (captain). Appointments are permanent in nature and provide opportunities to qualified physicians for a lifetime career in clinical medicine, research and public health. All commissioned officers are appointed to the general service and are subject to change of station.

For appointment in the grade of assistant surgeon, the applicant must be a citizen of the United States, at least 21 years of age and a graduate from a recognized school of medicine. Applicants for appointment in the grade of senior assistant surgeon, must meet the aforementioned requirements and must have had a total of at least ten years of educational training and professional experience subsequent to high school.

The professional written examination for the grade of assistant surgeon will cover the following subjects: (1) anatomy, physiology and biochemistry, (2) materia medica and therapeutics, (3) obstetrics and gynecology, (4) practice of surgery, (5) practice of medicine, (6) epidemiology and hygiene and (7) pathology and bacteriology. Senior assistant surgeon applicants will be examined on subjects 4, 5, 6 and 7, listed herein.

Examinations will be held at a number of points throughout the United States, located as centrally as possible in relation to the homes of candidates.

Entrance pay for an assistant surgeon with dependents is $5,011 per annum; for senior assistant surgeon with dependents, $5,689. These figures include the $1,200 annual additional pay received by medical officers as well as subsistence and rental allowance.

Application forms and additional information may be obtained by writing to the Surgeon General, United States Public Health Service, Washington 25, D. C. Attention: Division of Commissioned Officers. Complete applications must be received by Sept. 5, 1949.

## DR. KOLB RESIGNS

Dr. Lawrence Kolb has resigned as Director of Research Projects for the National Institute of Mental Health, and Dr. John Eberhart has been appointed to that position, effective July 1. Dr. Kolb has accepted a position as consultant in psychiatry at the Mayo Clinic, Rochester, Minn. Dr. Eberhart has been chief psychologist of the Training and Standards Branch of the National Institute of Mental Health. Prior to joining the Public Health Service Staff in 1947, he was chief of the Research Design Section, Surveys Division, Veterans Administration. He was formerly a member of the psychology faculty of Northwestern University and, for two years, was a post-doctoral fellow of the Social Science Research Council. He served as a Naval officer during the war. As Director of Research Projects, Dr. Eberhart will administer the program of grants in aid for research in the mental health field.

# Medical News

**(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)**

## CALIFORNIA

**Professor Fischer Wins Sugar Research Award.**—Prof. Hermann O. L. Fischer, Berkeley, carbohydrate chemist of the University of California, has been awarded the 1948 Sugar Research Award of $5,000. The National Academy of Sciences, which administers the award established by the Sugar Research Foundation, announced the selection. Professor Fischer came to Berkeley last year with Professor Wendell M. Stanley, chairman of the department of biochemistry and director of the Virus Laboratory. Dr. Fischer won the award on the basis of contributions to sugar and carbohydrate research, achieved mainly during his years at the Banting Institute at the University of Toronto. The award is the fourth annual Intermediate Prize presented by the foundation. Next year a $25,000 Grand Prize will be given for the outstanding research during the preceding five years, the Intermediate Prize winners being eligible.

## IDAHO

**State Medical Election.**—Idaho State Medical Association at its recent meeting in Sun Valley installed Dr. Walter R. West, Idaho Falls, as president and chose Drs. Russel T. Scott, Lewiston, president-elect and Alfred M. Popma, Boise, secretary-treasurer.

## ILLINOIS

**Personals.**—The Illinois Psychiatric Society at its election of officers in May chose Dr. Vladimer G. Urse, Chicago, as president and Dr. Louis D. Boshes, Chicago, secretary-treasurer. ——At the annual meeting of the Illinois Public Health Association in Chicago in April, Dr. Winston H. Tucker, commissioner of health of Evanston, was made president-elect of the Illinois Public Health Association.

### Chicago

**Research on Liver Diseases.**—The Board of Directors of the Hektoen Institute for Medical Research of the Cook County Hospital announces that the Dr. Jerome D. Solomon Memorial Research Foundation, an affiliate of the Hektoen Institute, has given its third annual grant of $12,300 for the continuation of research on diseases of the liver. This work is being done by Dr. Hans P. Popper, scientific director of the institute, and his associates.

**Gift for Laboratory to Study Allergy.**—Asthmatic Children's Aid has presented a gift of $10,000 to the University of Illinois Allergy Clinic to establish a histochemical laboratory for experiments in allergy. Asthmatic Children's Aid was organized in 1940 to further research on asthma and allergy and to provide relief for underprivileged children. The organization contributes also for the care of patients in clinics and the education of doctors who will specialize in the treatment of allergic diseases. The association has contributed a total of $50,000 to the University of Illinois in support of the Allergy Clinic.

## INDIANA

**Society Election.**—The Indiana Society of Anesthesiologists has elected Dr. Edward F. Bloemker, Indianapolis, president, and Dr. Richard E. Edmondson, Terre Haute, secretary-treasurer.

**Establish State Tumor Registry.**—The Indiana Association of Pathologists, in collaboration with the State Board of Health, the Indiana Cancer Society, the Indiana University School of Medicine and the Indiana State Medical Association, has established tumor registry for the statewide collection of data concerning all cases of cancer or cases suspected of being of cancer. The Indiana Cancer Society made this program possible by the provision of funds. The Indiana Association of Pathologists is giving assistance by studying the material as it is sent to the registry, while the Indiana State Board of Health is assisting by maintaining the registry under the direction of Dr. Wendell C. Anderson. About a year ago the Indiana Association of Pathologists, using funds provided by the Indiana Cancer Society, provided special training for a technician who now has headquarters in the department of pathology at Ball Memorial Hospital in Muncy. This technician is available on request for assistance in technical problems.

## KANSAS

**Program to Improve Rural Medical Care.**—A statewide program for improving rural medical care has been started by the University of Kansas School of Medicine, Lawrence, in cooperation with the Kansas State Medical Society and the Kansas Farm Bureau. Under the direction of Dr. Franklin Murphy, dean of the Kansas Medical School, Topeka, a program has been developed to (1) train more doctors with emphasis on the importance of general practice, (2) develop medical lectures and demonstrations for the country doctor in Kansas and offer more refresher courses for country doctors and (3) enlist the aid of communities to help recruit the doctors they need. The Kansas State Legislature has appropriated $3,800,000 for additions to the University of Kansas School of Medicine. The 72 Kansas communities which need doctors have public organizations or committees actively supporting a move to recruit doctors. Some communities are trying to attract doctors by offering to stake them for their beginning year; others offer facilities they need to practice medicine, and in most cases the townspeople provide buildings, equipment or loans without interest to make their communities more attractive.

## MAINE

**Jackson Memorial Laboratory Seminars.**—The first of the regular summer series of seminars at the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, began June 30. The remaining program for the summer is as follows:

July 21, Mr. Eugene Roberts, St. Louis, Chemical Studies of Epidermal Carcinogenesis
July 28, Jackson Laboratory Genetics and Normal Growth Panel
August 1, Mr. Duncan J. McDonald, Hanover, N. H.
August 4, Mr. Garson H. Tishkoff, New York, Chromatographic and Microbiological Methods in the Study of Growth Factors
August 11, Jackson Laboratory Endocrines Panel
August 22, Mr. Philip White, Development of Tumors in Plants
August 29, Dr. David A. Karnofsky, New York, Studies on Chemotherapy
September 1, Jackson Laboratory Pathology Panel

The seminars which are open to all interested persons, are held at 7:30 p.m. at Aldersea in Bar Harbor.

## MASSACHUSETTS

**Personal.**—Dr. Francis C. Lowell, associate professor of medicine at Boston University School of Medicine, has been appointed assistant dean of the Harvard Medical School, Boston. Dr. Lowell is a graduate of Harvard Medical School, 1936.

**Dr. Hinton Promoted to Clinical Professor.**—Dr. William A. Hinton has been promoted to clinical professor of bacteriology and immunology in the Harvard Medical School, Boston. Dr. Hinton has been on the medical school staff more than 25 years. He is known especially for the Hinton test and the Davies-Hinton test for syphilis. Dr. Hinton was graduated from Harvard College in 1905 and from Harvard Medical School in 1912. After eight years of laboratory practice in the Boston Dispensary and the Massachusetts Department of Health Dr. Hinton joined the staff of the Harvard Medical School as an assistant in preventive medicine and hygiene in 1923. He also has been a lecturer at Simmons College since 1919.

## MISSOURI

**Army Colonel Named Medical School Dean.**—Lt. Col. Melvin A. Casberg, of the Surgical Consultants' Division, the Surgeon General's office, has been named dean of the St. Louis University School of Medicine, St. Louis, effective the latter part of July, after he is separated from the army. Colonel Casberg was graduated in 1936 from the medical school to which he will return as dean. In 1940 he went to India, where he was chief of the Umri Mission Hospital, Berar. In 1942 he returned to the United States, entered the army and saw service in the North African campaign. In 1943 Colonel Casberg was reassigned to the China-Burma-India Theater of Operations. In 1946 he entered private practice at Long Beach, Calif., and was chief of staff at Jones Clinic Hospital, Long Beach, and senior attending surgeon, Harbor General Hospital, Los Angeles County. He returned to active duty in the army in January 1949.

## NEW JERSEY

**New State Department Bureau.**—Dr. Geoffrey W. Esty, Westfield, assumed the duties June 1 of director of the newly created Bureau of Constructive Health. Dr. Esty, a graduate of Harvard Medical School, Boston, 1931, formerly practiced pediatrics in Westfield; in 1941 he became associated with the Bureau of Maternal and Child Health as supervisor of medical personnel; following service in World War II he rejoined the division as a full time pediatrician.

## NEW YORK

**Personal.**—Dr. John G. Sigsby, Albany, has accepted the position of medical director of the Aftosa Commission at México, D. F., Mexico. The association has been set up to improve the health of Mexican cattle. More than 500 American veterinarians and cattle handlers have volunteered in the program under the direction of the U. S. Public Health Service. Dr. Sigsby will serve as their physician.

**Teaching Day on Heart Disease.**—The Suffolk County Medical Society on July 27 will have the following program at the Central Islip State Hospital, beginning at 10:30 a. m.:

J. Hamilton Crawford, Brooklyn, Management of Acute Cardiovascular Emergencies
A. Wilbur Duryee, New York, Management of Peripheral Vascular Disease
William T. Foley, New York, Use of Anticoagulants in Cardiovascular Disease
Leon J. Warshaw, Flushing, Management of the Failing Heart

This instruction is provided by the Medical Society of the State of New York with the cooperation of the State Department of Health.

**Salmonella Centre.**—The State Health Department's Division of Laboratories and Research has been designated as a Regional Salmonella Centre to collaborate with the World Salmonella Centre at the State Serum Institute, Copenhagen, Denmark. The World Centre was established by authority of the World Health Organization last summer. Its objective is the collection and identification of Salmonella strains. The state department laboratory was one of the first American laboratories to collaborate with the State Serum Institute in Copenhagen before the second World War when an International Salmonella Centre, financed by the Commonwealth Fund, was established at the State Serum Institute.

### New York City

**Study of Premature Infant Mortality.**—The Child Health and Welfare Committee of the Medical Society of the County of Kings, in cooperation with the Maternity Newborn Division of the New York City Department of Health, plans to conduct an analysis of premature infant mortality in Brooklyn. A representative of the committee and of the health department will analyze the death certificates as well as the hospital records. At some future time it is planned to make the findings of this study available to the profession, and it is hoped that corrective action will be taken as a result of these findings. Dr. Henry Rascoff is chairman.

## PENNSYLVANIA

**Personal.**—The Hahnemann Medical College and Hospital of Philadelphia conferred an honorary degree of Doctor of Laws on Dr. Leroy E. Chapman, Warren, June 24. Dr. Champman also has received a certificate of life membership in the Temple University Alumni Association, awarded annually to a member of the University Alumni for outstanding service.

**Henry Phipps Institute.**—The University of Pennsylvania Committee on the Henry Phipps Institute has been reconstituted following the death of former President Thomas S. Gates and retirement of Drs. Charles J. Hatfield and Alfred N. Richards. George William McClelland, LL.D., chairman of the university, has replaced Dr. Hatfield as chairman of the committee; other members are as follows: Harold E. Stassen, president of the university; Paul Musser, LL.D., provost; William H. DuBarry, administrative vice president; Dr. Robin C. Buerki, vice president in charge of medical affairs; Orville H. Bullitt, trustee, chairman of the board of medical affairs, and S. F. Houston and Colonel Edwin M. Chance, trustees. The committee held its annual meeting in the Library of the Institute on May 30 and adopted the budget for 1949-1950.

### Philadelphia

**Society News.**—The Philadelphia Laryngological Society on May 3 elected Dr. Valentine M. Miller president, Dr. Harry P. Schenck treasurer and Dr. William J. Hitschler secretary. Dr. Chevalier L. Jackson was elected to the executive committee.

**Establish Nutrition Clinic.**—The Philadelphia General Hospital announces the establishment of a Nutrition Clinic, which, with its research laboratory, will study various nutritional problems among the patients in the hospital and school children in Philadelphia. Dr. Michael G. Wohl, associate professor of medicine at Temple University School of Medicine, will be chief of the clinic, and Katheryn Langwill, professor of nutrition at Drexel Institute, will act as nutritionist.

**Faculty Changes at Woman's Medical College.**—Dr. Isabelle H. Perry has resigned as director of the department of oncology of the Woman's Medical College and has been appointed full time executive secretary of the Subcommittee on Oncology of the Committee on Pathology for the National Research Council. Dr. Mildred C. Pfeiffer will become director of the department of oncology. Dr. Pfeiffer is a graduate of the University of Pennsylvania School of Medicine, 1936. She has been assistant director of oncology at the Woman's Medical College since 1948. Dr. Irene E. Maher, clinical instructor in medicine, is assistant dean, effective June 15. Dr. Maher was a graduate of the college in 1944.

## RHODE ISLAND

**State Medical Election.**—The Rhode Island Medical Society at its recent annual meeting installed Dr. Peter P. Chase, Providence, as president and chose Drs. Charles J. Ashworth, Providence, president-elect; Morgan Cutts, Providence, secretary, and G. Raymond Fox, Pawtucket, treasurer. Dr. Charles L. Farrell was elected delegate to the American Medical Association.

## WEST VIRGINIA

**New Medical Licensing Board.**—The new medical licensing board has succeeded to all licensing duties of the Public Health Council. Members appointed by the governor are: Drs. Walter E. Vest, Huntington, president since 1937 of the Public Health Council, for a four year term; William P. Bittinger, Summerlee, also a former council member, for a five year term. Others appointed by the governor as members of the new board are Dr. Cecil B. Pride, Morgantown, one year term; George F. Evans, Clarksburg, two years; Frank J. Holroyd of Princeton, three years, and Doff D. Daniel of Beckley, five years; chiropodists: D. A. Afflack, Parkersburg, two year term, and E. R. Johnson, Charleston, three year term; chiropractors: F. M. Remick, Wheeling, one year term, and R. E. Tripp, Fairmont, four year term. The new board was appointed under the provision of H. B. 134, passed by the legislature February 21. It held its first meeting July 7-9.

**State Medical Meeting.**—The annual meeting of the West Virginia State Medical Association will be held at the Greenbriar Hotel, White Sulphur Springs, August 4-6, under the presidency of Dr. Thomas G. Reed, Charleston. Guest speakers at the morning general sessions are as follows:

Lloyd H. Mousel, Washington, D. C., Newer Developments in Anesthesia
Maxwell Finland, Boston, Antibiotics
Harry Gold, New York, Recent Developments in Cardiac Drugs
Irving S. Wright, New York, Present Status of Anticoagulant Therapy in the Treatment of Thrombo-embolic Diseases
William D. Stroud, Philadelphia, Congestive Heart Failure
Michael E. DeBakey, Houston, Texas, Current Considerations of Peripheral Vascular Disease
Richard B. Cattell, Boston, Surgery of the Pancreas
Sidney Farber, Boston, Tumors in Childhood
Ralph M. LeComte, Washington, Significance of Hematuria
Bayard Carter, Durham, N. C., Carcinoma of the Cervix Uteri

Panel discussions will follow the sessions on Thursday and Friday, and a question and answer period is scheduled following the papers Saturday morning. Dr. Harold C. Lueth, Omaha, will speak Friday evening on "Medical Care in the Atomic Age." Guest speaker at the banquet Saturday evening will be Will Durant, whose subject will be "What Are the Lessons of History." The Woman's Auxiliary will meet in conjunction with the medical association.

## GENERAL

**National Medical Association.**—The annual convention of the National Medical Association will be held August 8-12 in Detroit, with headquarters at the Horace G. Rackham Educational Building. The program has been arranged by sections. Clinics will be held at Detroit hospitals.

**Fund for Research on Leukemia.**—The National Research Council announces the availability of a fund of $25,000 from the estate of Charles R. Blakely for support of research in the field of lymphatic leukemia. Applications for grants-in-aid from this fund are now being entertained. Application forms may be obtained from the Chairman, Division of Medical Sciences, National Research Council, 2101 Constitution Avenue, N. W., Washington 25, D. C.

**Syphilis Case-Finding Campaign.**—More than 200 cities and counties in 28 states throughout the country are launching intensive syphilis case-finding campaigns during July and August. Approach to the public will be through material for use on the radio, on television, in movies and through advertising outlets purchased by state and local health departments. The U. S. Public Health Service has requested the assistance also of national magazines and other publicity channels.

**Special Society Awards.**—Dr. Herbert M. Evans, Berkeley, Calif., received the E. R. Squibb and Sons Award, and George Sayers, Ph.D., Salt Lake City, was named as the first recipient of the Ciba Award at the thirty-first annual meeting of the

Association for the Study of Internal Secretions held in Atlantic City June 3-4. It was also announced that Dr. Ernest M. Brown Jr., Philadelphia, has been selected as the Ayerst, McKenna and Harrison Fellow for 1949, and Dr. D. Lawrence Wilson is to be the Schering Fund Fellow.

**Heart Association New Research Grants.**—Eleven grants approximating $50,000 for investigation of heart and circulatory disease were announced June 27 by Dr. Harold M. Marvin of New Haven, Conn., president of the American Heart Association. New applications for Research Fellows and Established Investigators will be accepted up to September 15. Applications may be made to Dr. Charles A. R. Connor, Medical Director, 1775 Broadway, New York 19, N. Y. According to the American Heart Association, fellowships for established investigators will be ordinarily granted for a five year period, subject to annual review, for independent investigation at an annual stipend starting at $5,000 and with an annual increase of $500. These are open to superior persons of proved ability who are interested in a career in research. The research fellowships will be granted for one year, with stipends ranging from $3,000 to $4,000, and are open to graduates of approved medical or graduate schools who are interested in research and intend to follow an academic career.

**Prevalence of Poliomyelitis.**—Reports of cases of poliomyelitis for the periods indicated have been received from the Division of Public Health Methods, U. S. Public Health Service:

| Division and State | Week Ended | | | Total to | | Total * | |
|---|---|---|---|---|---|---|---|
| | July 2, 1949 | July 3, 1948 | Median, 1944-1948 | July 2, 1949 | July 3, 1948 | March 19-July 2, 1949 | March 20-July 3, 1948 |
| New England States: | | | | | | | |
| Maine | 0 | 0 | 0 | 11 | 0 | 11 | 0 |
| New Hampshire | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vermont | 0 | 0 | 0 | 3 | 1 | 1 | 0 |
| Massachusetts | 10 | 1 | 0 | 42 | 6 | 42 | 3 |
| Rhode Island | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Connecticut | 3 | 0 | 1 | 11 | 2 | 8 | 1 |
| Middle Atlantic States: | | | | | | | |
| New York | 12 | 7 | 14 | 68 | 76 | 48 | 40 |
| New Jersey | 2 | 3 | 3 | 71 | 46 | 35 | 39 |
| Pennsylvania | 2 | 5 | 2 | 29 | 34 | 19 | 23 |
| East North Central States: | | | | | | | |
| Ohio | 6 | 14 | 6 | 19 | 45 | 13 | 36 |
| Indiana | 7 | 2 | 2 | 31 | 41 | 21 | 31 |
| Illinois | 11 | 6 | 4 | 55 | 33 | 39 | 26 |
| Michigan | 10 | 1 | 0 | 58 | 21 | 31 | 15 |
| Wisconsin | 5 | 1 | 1 | 28 | 7 | 14 | 7 |
| West North Central States: | | | | | | | |
| Minnesota | 25 | 0 | 1 | 97 | 22 | 58 | 14 |
| Iowa | 4 | 0 | 1 | 42 | 73 | 29 | 60 |
| Missouri | 11 | 1 | 2 | 41 | 13 | 30 | 13 |
| North Dakota | 6 | 0 | 0 | 25 | 3 | 21 | 3 |
| South Dakota | 0 | 0 | 0 | 41 | 22 | 19 | 22 |
| Nebraska | 2 | 8 | 1 | 30 | 41 | 17 | 36 |
| Kansas | 13 | 4 | 1 | 48 | 20 | 22 | 17 |
| South Atlantic States: | | | | | | | |
| Delaware | 0 | 4 | 0 | 10 | 5 | 8 | 4 |
| Maryland | 0 | 0 | 1 | 14 | 1 | 5 | 0 |
| District of Columbia | 1 | 0 | 0 | 4 | 0 | 3 | 0 |
| Virginia | 4 | 2 | 2 | 17 | 21 | 7 | 19 |
| West Virginia | 6 | 1 | 1 | 34 | 7 | 27 | 2 |
| North Carolina | 3 | 92 | 5 | 58 | 360† | 31 | 336† |
| South Carolina | 0 | 4 | 2 | 23 | 27 | 10 | 19 |
| Georgia | 4 | 10 | 3 | 26 | 33 | 18 | 32 |
| Florida | 1 | 12 | 6 | 73 | 63 | 51 | 46 |
| East South Central States: | | | | | | | |
| Kentucky | 5 | 1 | 3 | 29 | 16 | 21 | 13 |
| Tennessee | 10 | 7 | 6 | 39 | 26 | 33 | 19 |
| Alabama | 14 | 3 | 3 | 65 | 32 | 52 | 20 |
| Mississippi | 0 | 3 | 3 | 65 | 15 | 54 | 13 |
| West South Central States: | | | | | | | |
| Arkansas | 59 | 3 | 3 | 157 | 20 | 146 | 18 |
| Louisiana | 15 | 0 | 2 | 63 | 32 | 51 | 26 |
| Oklahoma | 51 | 3 | 3 | 197 | 23 | 190 | 19 |
| Texas | 118 | 67 | 52 | 786 | 646 | 695 | 625 |
| Mountain States: | | | | | | | |
| Montana | 0 | 0 | 0 | 8 | 15 | 7 | 5 |
| Idaho | 9 | 4 | 0 | 52 | 49 | 39 | 22 |
| Wyoming | 2 | 2 | 0 | 7 | 6 | 7 | 6 |
| Colorado | 2 | 2 | 2 | 18 | 9 | 16 | 7 |
| New Mexico | 4 | 1 | 0 | 20 | 7 | 19 | 5 |
| Arizona | 3 | 7 | 0 | 21 | 16 | 10 | 15 |
| Utah | 1 | 2 | 0 | 52 | 11 | 36 | 8 |
| Nevada | 0 | 0 | 0 | 2 | 1 | 2 | 0 |
| Pacific States: | | | | | | | |
| Washington | 7 | 4 | 1 | 74 | 41 | 29 | 23 |
| Oregon | 2 | 1 | 1 | 45 | 25 | 29 | 9 |
| California | 29 | 74 | 22 | 487 | 355 | 198 | 323 |
| Total | 479 | 362 | ... | 3,197 | 2,368† | 2,273 | 2,020† |
| Median, 1944-1948 | ... | ... | 220 | 1,271 | | 874 | |

* Last two columns show reported incidence since approximate average seasonal low date: 15 weeks.

† Figures changed by corrected reports.

## PUERTO RICO

**Vaccinate Children Against Tuberculosis.**—More than 100,000 Puerto Rican school children will be vaccinated against tuberculosis during the next school year. This decision was reached at a meeting of federal and insular government officials, who met to discuss the use of BCG. Participating in the conference were insular commissioner of education Mariano Villaronga, health commissioner Juan A. Pons, Dr. Guillermo Arbona, of the insular health department, and Dr. Robert K. Williams, Robert J. Anderson and Dr. Edwardo Garrido Morales of the U. S. Public Health Service.

**New Medical School to Open in 1950.**—The rector of the University of Puerto Rico, Jamime Benitez, reports that the new school of medicine to be established in San Juan will start operation during the 1950-1951 school year. The school will be set up utilizing present facilities of the Postgraduate School of Tropical Medicine. The Superior Council of Education adopted a resolution to ask several medical professors on the staff of the School of Tropical Medicine who resigned their promotion soon after the law creating the new school was approved by the governor to continue in their posts. Dr. Enrique Koppisch is now acting director of the School of Medicine, and proper guarantees have been given to all employees of this institution that they will remain in their present positions. A resolution to that effect was adopted by the Superior Board of Education last month.

### Deaths in Foreign Countries

**Bernard E. Read, Ph.D.**, pharmacologist, acting director of the Henry Lester Medical Research Institute of Shanghai, China, died there June 13 after a long illness, aged 62. Dr. Read was a Rockefeller fellow at Johns Hopkins University, Baltimore, in 1916 and at Yale University, New Haven, Conn., in 1918. He served as professor of pharmacology at Peiping Union Medical College 1926-1932.——**Sir Frederick N. Menzies**, medical officer of health of the London County Council from 1909 until his retirement in 1939 and one of Britain's prominent physicians in the public health field, died May 15 at his home in London, aged 73.——**Professor Emilio Alfieri**, president Fondazione Mario Donati of Milan, Italy, died May 10. The foundation decided to commemorate the president by holding on June 16 the ceremony that he himself had planned for the official inauguration of the foundation.——**Sir James Purves-Stewart**, author of "Diagnosis of Nervous Diseases," which went into its ninth edition in 1945, and other publications, died in London June 15, aged 79.

## CORRECTION

**Dosage of Nor-Epinephrine.**—In the last column of table 2, in the article on nor-epinephrine in THE JOURNAL, July 2, 1949, page 777, the dosage of nor-epinephrine infused should have been expressed in micrograms per kilogram per minute instead of in milligrams.

**State Medical Election.** — The South Carolina Medical Association at its annual meeting installed Dr. Roderick MacDonald, Rock Hill, as president and chose Dr. Wilbur R. Tuten of Fairfax, president-elect; Dr. Julian P. Price, Florence, was reelected secretary-treasurer. The state medical election item in THE JOURNAL June 11, page 548, was in error.

# Marriages

HARVEY LORAINE BURNETTE JR., Cheraw, S. C., to Miss Mary Malissa Ratliff of Morven, N. C., June 4.

MORRIS JACOB SELIGMAN, Concord, N. H., to Miss Rhya Levine of Groton-on-Hudson, N. Y., in May.

JOHN EDWARD RYAN, Washington, D. C., to Miss Patricia Ellen Mortell of Oshkosh, Wis., April 23.

JOHN ALDEN VANN, Norfolk, Va., to Miss Anna Lyne Shackleford in Williamsburg, May 6.

MAURICE E. WILLIS, Burlington, Ky., to Dr. Lorraine Awes of Cedar Rapids, Iowa, May 24.

LEON J. SHULMAN, Los Angeles, to Miss Priscilla McIlvaine in Pasadena, Calif., May 27.

ROBERT F. NEAL, Carthage, Tenn., to Miss Caroline Acree Benz of Nashville, June 8.

J. TIMOTHY DONOVAN to Miss Eileen Frances McAllister, both of Brooklyn, in June.

## Deaths

**Thomas Addis,** San Francisco; born in Scotland in 1881; University of Edinburgh Faculty of Medicine, Scotland, 1905; in 1911 joined the faculty of Stanford University School of Medicine, where he had been professor of medicine and where in 1946 he retired from active teaching with the title of professor emeritus; fellow of the Royal College of Physicians of Edinburgh, which in 1942 awarded him the Cullen Prize "for the greatest benefit done to practical medicine in the previous four years"; member of the National Academy of Sciences, Association of American Physicians and the American Society for Clinical Investigation; fellow of the American College of Physicians; a former Carnegie Research scholar and fellow, and the first visiting scholar at the Long Island College of Medicine in Brooklyn, where in 1940 he delivered the Adam M. Miller Memorial Lecture; in 1931 he delivered the fourth course of lectures under the William Sydney Thayer and Susan Read Thayer Lectureship in Clinical Medicine, in the School of Hygiene and Public Health, Johns Hopkins University School of Medicine, Baltimore; co-author of "Renal Lesion in Bright's Disease"; author of "Glomerular Nephritis: Diagnosis and Treatment"; specialist certified by the American Board of Internal Medicine; died in Cedars of Lebanon Hospital, Los Angeles, June 4, aged 67.

**Roy Biggs Henline** ⊕ New York; born in Kearney, Neb., June 21, 1894; Northwestern University Medical School, Chicago, 1920; specialist certified by the American Board of Urology; member of the American Urological Association; fellow of the American College of Surgeons and the New York Academy of Medicine; member of the House of Delegates of the American Medical Association in 1943 and from 1945 through 1948; past president of the New York County Medical Society; served during World War I; on the staff of the Medical Arts Center Hospital; director of urology at Sydenham Hospital; consultant in urology at St. Luke's Hospital, Newburgh, Yonkers (N. Y.) General Hospital and Mount Vernon (N. Y.) Hospital; attending surgeon to the James Buchanan Brady Foundation at New York Hospital, where he died May 23, aged 54, of arteriosclerotic heart disease.

**John J. Sippy** ⊕ Stockton, Calif.; born in Venice, Ill., July 13, 1879; St. Louis College of Physicians and Surgeons, 1899; associate clinical professor of public health and preventive medicine, emeritus, Stanford University School of Medicine, San Francisco; past president of San Joaquin County Medical Society; member and past president of the American Public Health Association; formerly secretary of the Kansas State Health Officers Association; while practicing in Belle Plaine, Kan., served as part time public health officer of Sumner County; at one time epidemiologist for the Kansas State Health Department; formerly director of child welfare and epidemiologist for the Montana State Board of Health; died March 15, aged 69.

**Eli Herr Long,** Buffalo; born in Clarence, N. Y., July 24, 1860; University of Buffalo School of Medicine, 1882; joined the faculty of the University of Buffalo, where he became professor of materia medica and therapeutics and later professor emeritus, in the school of medicine, professor of materia medica in the school of pharmacy and professor of materia medica and therapeutics in the school of dentistry; member of the American Medical Association; past president of the Association of American Medical Colleges; for many years affiliated with the Buffalo General Hospital; author of four editions of Dental Materia Medica, Therapeutics and Prescription Writing and others; died May 31, aged 88.

**Clarence Franklin Ball,** Rutland, Vt.; born in 1878; American Medical Missionary College, Battle Creek, Mich., and Chicago, 1902; past president of the Vermont State Medical Society; member of the American Medical Association; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society and the American Radium Society; fellow of the American College of Radiology and American College of Surgeons; founder of the Vermont Cancer Commission, of which he had been president; affiliated with Rutland Hospital, where he died May 15, aged 71, of embolism.

**James G. Douglass,** Ballinger, Texas; born in Covington Feb. 28, 1874; Medical Department of Tulane University of Louisiana, New Orleans, 1898; member of the American Medical Association; formerly secretary and president of Runnels County Medical Society and of the Fourth District Medical Society; served as city health officer, as local surgeon for the Missouri-Kansas-Texas Railway and the Santa Fe and Abilene Southern Railroad; formerly vice president of the First National Bank; died in a local hospital March 2, aged 75, of hypertension and cerebral hemorrhage.

**Karl Winfield Ney** ⊕ Stuart, Fla.; born in Franklin, Ind., Aug. 1, 1882; Louisville and Hospital Medical College, Louisville, Ky., 1908; formerly dean and professor of neurosurgery at the New York Polyclinic Medical School and Hospital and clinical professor of neurosurgery at the New York Medical College and Flower Hospital in New York; served overseas during World War I; at one time affiliated with the Presbyterian Hospital in New Orleans; formerly director of neurosurgery at the Neurological Institute of New York; died May 30, aged 66.

**John Adolph Bacher** ⊕ San Francisco; Harvard Medical School, Boston, 1911; Associate Fellow of the American Medical Association; clinical professor of surgery, emeritus (otorhinolaryngology), Stanford University School of Medicine; specialist certified by the American Board of Otolaryngology; formerly practiced in San Jose, Calif., where he was bacteriologist for the city board of health and secretary of Santa Clara County Medical Society; died April 10, aged 72, of carcinoma.

**Fred Daniel Baty,** Ruth, Nev.; University of Kansas School of Medicine, Kansas City, 1940; member of the Kansas Medical Society; died May 8, aged 42.

**Edgar Randolph Beckley,** Washington, D. C.; Howard University College of Medicine, Washington, 1897; died in Freedmen's Hospital May 19, aged 76.

**Karl Marx Bonoff** ⊕ Los Angeles; College of Physicians and Surgeons, Los Angeles, 1914; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, Radiological Society of North America and the American College of Radiology; served during World War I; died May 10, aged 57, of injuries received in an automobile accident.

**William Benjamin Borden** ⊕ Colonel, U. S. Army, retired, Wayne, Pa.; University of Maryland School of Medicine, Baltimore, 1906; fellow of the American College of Surgeons; entered the medical corps of the U. S. Army as a first lieutenant in 1913; served during World War I; promoted through the various ranks to that of colonel on May 23, 1939; retired on Jan. 31, 1943, for disability in line of duty; died in Valley Forge General Hospital, Phoenixville, Pa., May 15, aged 69, of metastatic carcinoma.

**Jacob Harold Chalat** ⊕ Detroit; University of Michigan Medical School, Ann Arbor, 1917; served during World War I; charter member of the American Diabetes Association; died in Harper Hospital May 12, aged 61, of coronary sclerosis.

**Samuel Lee Cline,** Live Oak, Calif.; Kentucky School of Medicine, Louisville, 1908; died May 20, aged 76, of cerebral hemorrhage.

**David Leonard Cohen** ⊕ New York; University and Bellevue Hospital Medical College, New York, 1930; specialist certified by the American Board of Urology; served during World War II; on the staffs of the Montefiore and Beth Israel hospitals; died in Park East Hospital June 1, aged 47.

**Sidney Beeson Conger** ⊕ Wilmette, Ill.; Chicago College of Medicine and Surgery, 1914; served during World War I; died in Wesley Memorial Hospital, Chicago, May 29, aged 59, of carcinomatosis.

**Ernest Crockett,** Ashtabula, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900; served as county coroner; on the staff of Ashtabula General Hospital; died in Massillon May 18, aged 75, of arteriosclerosis.

**Avac Cutujian,** Frederick, Md.; Long Island College Hospital, Brooklyn, 1893; died in Frederick Memorial Hospital May 16, aged 88.

**Velpeau C. Dail,** Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1891; member of the American Medical Association; died in Fort Sanders Hospital May 16, aged 77.

**John B. Dalton,** Graysville, Ga.; Atlanta College of Physicians and Surgeons, 1899; died April 23, aged 79.

**Don Favorite Deeter** ⊕ Troy, Ohio; University of Cincinnati College of Medicine, 1925; also a graduate in pharmacy; served during World War I; affiliated with Stouder Memorial Hospital, where he died May 20, aged 52, of coronary thrombosis.

**John E. Dusseldorf,** New York; Long Island College Hospital, Brooklyn, 1887; member of the American Medical Association; died May 23, aged 86.

**Homer Richard Evans,** San Bernardino, Calif.; California Eclectic Medical College, Los Angeles, 1913; served during World War I; died April 13, aged 67.

**Richard Fleischer** ⊕ New York; Friedrich-Alexanders-Universität Medizinische Fakultät, Erlangen, Bavaria, Germany, 1916; affiliated with the Beth Israel Hospital, Hospital for Joint Diseases and Mount Sinai Hospital, where he died May 8, aged 58.

**George William Funck,** Englewood, Fla.; Rush Medical College, Chicago, 1903; died May 19, aged 72.

**Walter Edward Futrelle,** Chillicothe, Ohio; Jefferson Medical College of Philadelphia, 1921; member of the American Psychiatric Association; served during World War I and II; since 1931 affiliated with the Veterans Administration; chief, professional services, Veterans Administration Hospital, where he died recently, aged 60, of coronary thrombosis.

**Walter Fitzgerald Hartman** ⊕ Richmond, Va.; University of Virginia Department of Medicine, Charlottesville, 1889; Bellevue Hospital Medical College, New York, 1890; an Associate Fellow of the American Medical Association; past president and secretary of the Augusta County Medical Society; served during World War I; died April 8, aged 84.

**John Martin Hayek,** Des Moines; State University of Iowa College of Medicine, Iowa City, 1926; member of the American Medical Association; for many years director of the division of maternal and child health, Iowa State Health Department; died in Iowa Methodist Hospital May 24, aged 47, of cerebral hemorrhage.

**Richard Gainsforth James,** Detroit; Detroit College of Medicine, 1904; member of the American Medical Association; served during World War I; died in Linden Beach, Ontario, Canada, May 29, aged 66.

**Malcolm Benjamin Jernberg,** Hollywood, Miss.; University of Louisville (Ky.) Medical Department, 1911; member of the American Medical Association; died in Methodist Hospital, Memphis, Tenn., May 18, aged 61.

**Thomas Robert Kennedy** ⊕ St. Louis; St. Louis University School of Medicine, 1919; on the staff of St. John's Hospital; died in the Mayo Clinic, Rochester, Minn., May 23, aged 51.

**Morris John Kotler** ⊕ San Diego, Calif.; Washington University School of Medicine, St. Louis, 1928; served during World War II; died May 23, aged 49.

**Edward Henry Krueger** ⊕ Denver; Bennett Medical College, Chicago, 1912; affiliated with St. Anthony's, Presbyterian and Samaritan hospitals; formerly member of the state athletic commission; died May 19, aged 60.

**Oran Robert Lasater** ⊕ Ballinger, Texas; University of Texas School of Medicine, Galveston, 1918; formerly secretary and president of the Runnels County Medical Society; served during World War I; died March 11, aged 60, of coronary embolism.

**William W. Lathrop,** Jackson, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1884; member of the American Medical Association; died May 7, aged 87.

**Anthony Joseph Manzella,** Buffalo; University of Buffalo School of Medicine, 1927; director of the division of communicable diseases, county health department; served as deputy city health commissioner and director of the division of communicable diseases for the city health department; died February 24, aged 48.

**Lovina Ruth Merritt Miller** ⊕ Sanitarium, Calif.; American Medical Missionary College, Battle Creek, Mich., and Chicago, 1901; served on the staff of St. Helena Sanitarium and Hospital; died in April, aged 75.

**Louis Amandas Mueller,** Chicago; Rush Medical College, Chicago, 1899; died June 4, aged 75, of arteriosclerosis and paralysis agitans.

**Thomas J. Murray** ⊕ New London, Conn.; University of Maryland School of Medicine, Baltimore, 1910; past president of the New London County Medical Society; on the staff of Lawrence and Memorial Associated Hospitals; died April 16, aged 63, of hemorrhage from esophageal varices.

**Joseph Eugene Nelson,** Cambridge, Mass.; Jefferson Medical College of Philadelphia, 1945; certified by the National Board of Medical Examiners; associated with the Massachusetts Institute of Technology; killed May 22, aged 26, in an airplane crash near Pine Plains, N. Y.

**Charles Russell Nutt,** Plymouth, Wis.; University of Pennsylvania Department of Medicine, Philadelphia, 1894; died in St. Nicholas Hospital, Sheboygan, March 31, aged 83, of chronic myocarditis and hypertrophy of the prostate.

**Romuald Othello Ostrowski** ⊕ Hammond, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; received the Silver Beaver award for his work with the Boy Scouts; died June 3, aged 68, of coronary thrombosis.

**Clara Fogle Palmer,** McAlester, Okla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; died April 21, aged 76, of cancer of the gastrointestinal tract.

**Charles Burton Popplestone,** Fairfield, Me.; Dalhousie University Faculty of Medicine, Halifax, Nova Scotia, Canada, 1924; member of the American Medical Association; past president of the Knox County Medical Society; superintendent of the Central Maine Tuberculosis Sanatorium; killed March 30, aged 47, when his automobile was struck by a train.

**Henry Bradford Powell,** Ocean Springs, Miss.; Victoria University Medical Department, Coburg, Ontario, Canada, 1892; served in the Spanish-American War and World War I; died in Gulfport, May 30, aged 83.

**Karl Ferdinand Marius Sandberg,** Chicago; Kongelige Frederiks Universitet Medisinske Fakultet, Oslo, Norway, 1881; member of the American Medical Association; died June 4, aged 93, of coronary occlusion and chronic nephritis.

**William Dennis Scanlan,** Brooklyn; Long Island College Hospital, Brooklyn, 1907; member of the American Medical Association; on the staff of the Samaritan Hospital; died May 29, aged 68, of carcinoma of the stomach.

**Urban A. Schlueter** ⊕ Milwaukee; Milwaukee Medical College, 1912; member of the American Association of Industrial Physicians and Surgeons; past president and secretary of the Medical Society of Milwaukee County; formerly police surgeon; for many years on the staff of St. Luke's Hospital, where he died May 21, aged 59, of an internal hemorrhage.

**Gifford DeAlton Seitz,** Portland, Ore.; University of Oregon Medical School, Portland, 1932; member of the American Medical Association; specialist certified by the American Board of Obstetrics and Gynecology; clinical instructor of obstetrics and gynecology at his alma mater; on the staff of St. Vincent's Hospital; died May 27, aged 41, of coronary thrombosis.

**Mathew McKnight Shaw,** Madrid, Iowa; Drake University College of Medicine, Des Moines, 1904; member of the American Medical Association; past president of the Boone County Medical Society; died May 16, aged 73.

**John Joseph Shea,** New York; University of the City of New York Medical Department, 1891; died in St. Vincent's Hospital May 29, aged 81.

**Jacob Silver,** New York; Fordham University School of Medicine, New York, 1918; died in Boston recently, aged 55, of embolism.

**William J. Stribling,** Philadelphia, Miss.; Memphis (Tenn.) Hospital Medical College, 1900; for many years county health officer; director of the Citizens Bank; died May 24, aged 70.

**Glenn George Sweeley,** Hughson, Calif.; University of Southern California School of Medicine, Los Angeles, 1941; member of the American Medical Association; died May 25, aged 42.

**Archibald Moltz Wilkins** ⊕ Delta, Ohio; Toledo Medical College, 1898; past president of the Fulton County Medical Society; veteran of the Spanish-American War, Philippine Insurrection and World War I; on the staff of the DeEtte Harrison Detwiler Memorial Hospital, Wauseon; died March 29, aged 74, of coronary thrombosis.

## DIED WHILE IN MILITARY SERVICE

**Richard Ray Dalrymple,** Englewood, N. J.; Jefferson Medical College of Philadelphia, 1920; member of the American Medical Association and of the State Medical Society of Wisconsin; interned at St. Vincent's Hospital in Erie, Pa.; began active duty as a major in the medical corps, Army of the United States, on Sept. 1, 1942; died in the Walter Reed General Hospital, Washington, D. C., Oct. 19, 1947, aged 56, of tuberculosis.

**Alvin Jay Meyer,** New York; University of Pennsylvania School of Medicine, Philadelphia, 1945; interned at Lenox Hill Hospital; entered the medical corps, Army of the United States, with the rank of first lieutenant on April 25, 1946; promoted to captain; died in Honshu, Japan, Nov. 9, 1947, aged 25.

# Foreign Letters

## ITALY

*(From Our Regular Correspondent)*

FLORENCE, May 31, 1949.

### Optokinetic Nystagmus

Dr. L. Cojazzi and Dr. O. Sala of Padua presented to the National Congress of Oto-Neuro-Ophthalmology an interesting report on the value of optokinetic nystagmus in the central vestibular syndromes.

Up to now some noteworthy results of a clinical character have been obtained in the course of physiologic and clinical investigations which have been carried out recently by the authors with regard to the difficult problem of the relationship interfering with the optokinetic and vestibular nystagmus induced in men in various conditions.

Starting from previous observations which confirmed constantly the fact that optokinetic nystagmus inhibits vestibular caloric nystagmus of opposite direction elicited with Weits' technic, the speakers have been able to demonstrate in a large series of patients these facts:

1. In persons who are normal from the oto-neuro-ophthalmologic point of view, a caloric stimulation, much more intense than that obtainable with Weits' technic, may induce a pronounced and prolonged nystagmus, which, however, may be inhibited always by a simultaneously provoked optokinetic nystagmus. For this phenomenon the term "peripheral, instrumental hyperreflexia" was coined.

2. Such inhibition on the part of the optokinetic nystagmus may be observed likewise in persons who present a pathologic peripheral hyperreflexia resulting from a "standard" caloric stimulus (method by Weits).

3. In patients, on the contrary, who presented a hyperreflexia on standard caloric stimulation of purely central origin through suffering of the supranuclear vestibular tracts, the optokinetic nystagmus was not of such degree as to inhibit the provoked nystagmus.

4. In some patients who presented spontaneous ocular nystagmus, the speakers studied the behavior of the optokinetic nystagmus with the aim to observe whether it might be possible to obtain a reliable element for differentiating the vestibular or extravestibular origin of a spontaneous nystagmus.

But in these cases the optokinetic nystagmus did not give constant results. Therefore the speakers stated that its behavior may not have an absolute differential value.

### Treatment of Gastroduodenal Ulcers

At the Second Interregional Congress of Medicine and Surgery held in Lecce, the problem of gastroduodenal ulcers was discussed extensively; three reports—one medical, one surgical and one roentgenologic—were presented.

The medical report was presented by Professor Di Guglielmo; after a rapid summary of the principal modern methods of medical treatment of ulcer disease, he established some fundamental concepts concerning uncomplicated ulcers as follows:

1. Although there does not exist at present a single specific cure, we have at our disposal a complex of therapeutic procedures by which one may succeed through various mechanisms to influence the numerous pathogenetic factors of gastroduodenal ulcers by suppressing or attenuating their noxious action.

2. Early diagnosis and perseverance in the application of hygienic, dietetic and pharmacologic norms lead to major successes with medical treatment.

3. Prevention of recurrences requires intervention in the prodromal phase, which may be manifested by neuromuscular symptoms several weeks before the reappearance of pain. The most important of these symptoms are fatigue, incapacity of concentration and bad mood in the early hours of the day; waking up at 3 or 4 o'clock in the morning represents an unusual fact in these persons who usually have slept normally and regularly. The neuromuscular symptoms subside with the administration of alkaloids of belladonna combined with phenobarbital (luminal®); in this stage of the disease the results of treatment are excellent.

4. Hormone treatment has not yet reached a point to yield therapeutic results, which could be expected on the basis of physiopathologic premises and experimental research.

5. Among the various methods of treatment actually practiced, some are based on the now indisputable physiologic concept that the vagus nerves are responsible for the excess in hyperacid gastric juice which may be observed in the empty stomach of patients with ulcer. Professor Di Guglielmo concluded that the facts reported by him represent the basis on which physicians and surgeons who in the past followed absolutely opposite routes, may meet one another in cooperative work which has as its aim to suppress the noxious action of the vagus nerves by medical and successively by surgical methods.

The surgical report was presented by Professor Palma who discussed the various methods of intervention for the surgical treatment of gastroduodenal ulcers. The speaker emphasized that one does not yet know well the effect of vagotomy on the function of the pancreas, liver, gallbladder, intestines, kidneys and adrenals. The possibility of aggravating the arterial hypertension has been mentioned. At present, with the exception of the cases of recurrence of ulcer, one cannot say that the results obtained with vagotomy are such that this method should be preferred to any other type of surgical treatment. Considering the multiple disturbances which had been observed in a certain percentage of cases, one would be rather induced to share the opinion of Deryl Hart's, who stated that from the functional point of view vagotomy may turn out to be more mutilating than resection and the resulting advantages may not compensate for the occasional complications.

Among the palliative interventions, in spite of today's wide use of resection, the gastroenterostomy has an incontestable place in the treatment of gastroduodenal ulcers, particularly in those cases in which, because of general and local conditions, a radical operation is not feasible.

Today extensive resection may be considered as the method of choice for surgical treatment of gastroduodenal ulcer. It is true that it does not correspond with the qualifications of causal therapy, but there is no doubt that by removal, in addition to the ulcerous focus, of a good part of the source of production of the acid secretion of the stomach it determines a state of achlorhydria, which is an undispensable condition for prevention of recurrences.

In discussing the medical treatment of perforated ulcer, the speaker emphasized that the experience is still too limited for definite judgment. Concerning surgical treatment, simple suture with omentopexy presents an intervention which is sufficient to save the life of the patient but does not present a remedy against occasional complications (hemorrhage, perforation). The resection, on the contrary, offers a remedy against perforation and at the same time a cure of the causal disease. The speaker does not recommend general performance of resection in all the cases of perforating ulcer, but he affirms that resection may yield excellent results in the hands of experts, when limited to patients of not too advanced age who are seen early (from the sixth to the ninth or at the most the twelfth hour after the perforation) and whose general condition is satisfactory.

Hemorrhagic ulcer formed the last subject dealt with by the speaker. As long as there is only moderate hemorrhage, it does not impair the efficiency of the organism and may be compensated for by the protein hematic reserves of the organism. In these cases, particularly if the condition occurs for the first time in young persons and in persons without previous gastric disturbances, medical treatment should be practiced.

On the contrary, when one has to deal with patients over 40 years, with previous gastric disturbances for many years, with evacuation of blood and in whom considerable hemorrhages recur, precocious intervention seems advisable, which will give better results than that performed in a later period when toxic factors may be associated with the anemia thus increasing the operative risk.

The roentgenologic report was presented by Dr. Calabrese who used many roentgenograms in discussing the development and the structural consequences of gastroduodenal ulcer.

### Treatment of Liver Disease with Lipotropic Substances

At the Medical Society of Naples Dr. F. Cutillo reported the results obtained by him in 8 cases of diseases of the liver treated for fifteen days with the pancreatic antifatty liver factor prepared according to the technic of Entenman, Montgomery and Chaikoff.

In addition to the usual tests of hepatic function, the protein content was ascertained every five days during the entire duration of the treatment and five days after treatment was discontinued.

The level of protein proved to be an optimum test of hepatic function, and in those cases in which restoration of the protein values to normal has been verified the therapeutic results from use of the antifatty liver factor were definitely verifiable in the clinical manifestations as well as in the other functional tests. In cases in which the protein values remained unchanged, there were no other signs of improvement.

The speaker closed his report by emphasizing that the data of the protein picture maintain all their value as an expression of hepatic function when the liver is compromised clinically and that in some cases the restoration or the lack of restoration of the protein ratio to normal may represent a prognostic sign of great usefulness.

## COPENHAGEN

*(From Our Regular Correspondent)*

June 11, 1949.

### Denmark's Infant Mortality

The outer world seems to think that we Scandinavians are one big family with much the same medical problems and achievements whether the country in question is Denmark, Norway or Sweden. To be sure, we all have a high public health standard, and our vital statistics are a source of gratification to ourselves and, we modestly hope, a source of inspiration to our neighbors. But when we take stock of ourselves in some detail, we find from time to time that progress in medicine has not been equally effective in these three countries. Infant mortality illustrates this point rather well. In 1947 the infant mortality in Denmark was 4 per cent, whereas in Sweden it was only 2.5 per cent. In other words, Sweden could share with New Zealand the claim to being the country with the lowest infant mortality in the world, while Denmark had to concede pride of place in this respect to such countries as Holland, Switzerland and Norway. Substantial consolation is, however, to be found in the fact that Denmark's infant mortality was as high as 13.4 per cent as recently as 1901. Since then there has been a rather jerky fall; in the period 1920-1930 there was hardly any fall whatever. The fall since 1901 has largely been due to a higher standard of living and, of late years, to a more effective treatment of bronchopneumonia. When BCG vaccination has become fully established we may expect a further fall owing to the elimination of the score of deaths still due to tuberculosis in infancy every year.

But how can we indulge in any self complacency as long as our own infant mortality is so much higher than that of Sweden? Dr. P. Hertz of Copenhagen has recently discussed this problem. His most important point turns on breast feeding, which is practiced much more conscientiously in Sweden. Another of his points is that infant welfare as a discipline has been given much greater prominence in Sweden, where pediatrics has been a subject for the examination of medical students since 1845. In Denmark, on the other hand, it was not till 1939 that this subject was allowed to rank as high as medicine and surgery in the medical curriculum. In this respect Norway has held an intermediate position, having adopted pediatrics as an independent discipline in 1893.

### The Wassermann Testing of Pregnant Women

The law of Oct. 1, 1945 (no. 472), concerned with the hygiene of pregnancy, provided for the routine Wassermann testing of the blood early in pregnancy. Now, with a perspective of some three years, it is possible to take stock of this measure and to form an approximate estimate of its effectiveness. It is probable that about 80 per cent of all the pregnant women in Denmark are now given the benefits of this test. But to what extent is it undertaken early enough in pregnancy to be an effective guide to the prevention of congenital syphilis? Dr. P. Wiingaard has lately published the results of an inquiry into this matter undertaken by the State Serum Institute in Copenhagen, to which all blood samples are sent. The inquiry showed that at the beginning of the fifth month of pregnancy only 55.7 per cent of the samples had been taken. The remaining 44.3 per cent were taken during or after the fifth month of pregnancy. In as high a proportion as 17.1 per cent (corresponding to 12,000 pregnancies yearly) the samples were not taken till the seventh, eighth or ninth month of pregnancy. At so late a stage of pregnancy the prospects of preventing congenital syphilis, based on a positive Wassermann reaction, are meager. Dr. Wiingaard suggests that a well sustained educational campaign is the best measure for reform in this field. The prospects for it are the brighter for the fact that Danish expectant mothers have shown themselves intelligently appreciative of the benefits conferred on them by the new law.

### Every Third Patient a Mental Case?

We have of late got into the way of saying with axiomatic pedantry that in general practice every third patient is more or less a mental case. But what carefully analyzed statistical investigations exist in support of this claim? The Danish psychiatrist, Dr. H. I. Schou, who is in charge of the Dianalund Hospital, has lately set out to verify this claim by securing the cooperation of eight medical practitioners in Odense. They have undertaken to keep a record during 1949 of all their patients with regard to the part played by the mental or psychic factor. They have promised to keep special records of their cases of neurasthenia "nervosismus," neurosis, hysteria, mental depression and psychopathia. They note (1) whether these conditions constitute the main or a side issue, (2) the duration of the treatment received under ambulant conditions as well as of unemployment, (3) the cost of drugs and loss of earnings and (4) the relative number of such patients according as they are or are not given resident treatment in a hospital.

Realizing that this local investigation may be insufficient for his purpose, and that conditions are not the same in town and country and that the interest a doctor takes in psychiatry may greatly affect the composition of his sick list, Dr. Schou has issued an appeal to doctors all over Denmark to join in this scheme of research for a year. It is hoped by this means to check the accuracy of the statement that there are at present 150,000 cases of neurosis in Denmark. Dr. Schou has already sought to ascertain the number of patients receiving hospital treatment and pecuniary compensation for neuroses in 1944 and 1946, and his findings will shortly be published. If he can secure sufficient cooperation in his scheme for the investigation of the amount of ambulant treatment devoted to neuroses, we should have a fairly complete picture of both the ambulant and the hospital treatment of mental patients in Denmark.

# Correspondence

## MEDICAL PRACTICE IN TURKEY

*To the Editor:*—Recently I spent a vacation investigating the present state of medical practice in Turkey. Having spent several years there (1902-1909) at which time native civilian medical practice was deplorably lacking in both quality and quantity, I wished to learn whether the amazing transformation of the social, educational and cultural life of the people, following in the wake of the revolution in the early 1920's was also apparent in their medical practice, hospitals and sanitation.

In general, I found that to be the case. Such physicians as Dr. Beçet Uz, ex-minister of Turkey's Department of Health, Dr. Kadri Olçar and Dr. Sürreyeh Görduren, all of Ankara, the capital, are physicians of a high order of excellence devoted to their profession and generous of their time and courtesy to the visitor. Dr. Görduren is an internationally known ophthalmologist and is on the corresponding editorial staff of the *British Journal of Ophthalmology,* as I learned from several reprints which, at my request, he gave me. His office equipment included all that one could desire, of German, English and American manufacture.

He has somewhat of a preference for intracapsular cataract extraction and showed me several cases, also a case of anthrax of the eye. Anthrax is not uncommon in Turkey and, I was told, responds well to penicillin therapy. Trachoma is plentiful but less so than formerly because of better sanitation. Formerly a large proportion of the population was afflicted by it and most cases of blindness were due to it. The university I found modern and interesting. The archeologic collections of Hittite origin are probably unrivaled anywhere, which is to be expected, for Ankara is near the center of that ancient kingdom.

At Erzerum I found Dr. Rivki, head of the local health department, cordial and tireless in showing me his hospital and equipment. In addition to the civilian there is also a new military hospital, modern in appearance, befitting the military importance of the city.

Returning by plane to Istanbul, I found it more difficult to contact the faculty members of the medical school, as it was closed for vacation; but I met Dr. Neçit Ferit, formerly professor of chemistry and found he has been much in America and has a perfect and idiomatic command of English. His present activities include chemical manufacturing, a field of development much needed in Turkey, especially in the realm of medicine.

Turning to foreign hospitals, which for the most part are American, one may mention as the two largest the one in Aintab (now Gaziantep) established by Dr. Shepard the elder, and that more recently started by his son, Dr. Lorrin Shepard in Istanbul. The latter is known as the Admiral Bristol Hospital—a tribute to him personally who was greatly esteemed by Turks and Americans alike in Istanbul. It is also commonly called the American hospital.

In addition to medical, surgical and special wards, there is a nurses' training school. Housing for the nurses and student nurses is inadequate, and a financial campaign for a building for them is under way. As planned it will cost nearly $150,000 and would meet the needs of that part of the hospital for many years. I was shown the hospital thoroughly by Dr. Shepard and was most favorably impressed by it and by the way it is conducted. As to be expected both the Doctor and his institution go at peak capacity. He is a member of the Istanbul medical society and participates in its activities as occasion permits. Professionally he keeps well up to date.

City and rural sanitation I found still imperfect, but much progress has been made; I no longer encountered, as I did years ago, midstreet open sewers, food in the shops black with flies, universal trachoma and pavements sometimes festooned with *Ascaris lumbricoides.* Nor did I deem it necessary to flame the native bread with an alcohol lamp before eating it as I did in the interior of Turkey years ago. Apparently the populace still distrusts the watermains for drinking purposes to some degree, for bottled drinking water is everywhere in evidence and is paid for as a matter of course. Typhoid is not everywhere and always, as formerly; but it is not rare as in America. The same can be said of malaria.

Sulfonamide drugs and penicillin are well known and in general use. In Ankara and Istanbul the health department doctors are making good use of descriptive and illustrated charts of infectious diseases placed in small "museums of hygiene" in parks and pleasure resorts.

H. L. UNDERWOOD, M.D., Portland, Ore.

## ACUTE ARTERIAL INJURIES

*To the Editor:*—Although the lateness of the hour barred my attempted discussion of Dr. Freeman's paper on "Acute Arterial Injuries" (THE JOURNAL, April 23, p. 1125), the alleged injury of tissues by refrigeration and especially Dr. de Takats' assertion that refrigerated tissues cannot survive should still be compared with the following facts: (1) the survival of animals' legs after fifty-four hours (my original experiments) and of rats' tails after ninety-six hours (Brooks and Duncan) of refrigeration without circulation; (2) the healing of stumps after the usual refrigeration with a tourniquet for several hours, extended in one instance to forty-eight hours (Crossman); (3) the successful reconstruction of a mangled hand after packing in ice for two weeks (Nachlas); (4) severed fingers, hanging only by a shred of skin, saved with refrigeration for several days when they could not be saved otherwise (Crossman, Kanaar and others); (5) reduced temperatures for orthopedic treatments (Schaubel) and refrigeration anesthesia without a tourniquet for orthopedic operations (Gratz); (6) Kross's saving of both life and limb in a badly infected burn of a leg by several days of radical refrigeration and eleven weeks of more moderate cooling; (7) the practical value of refrigeration in arterial wounds, demonstrated by: (*a*) refrigeration of legs for two or two and one-half weeks (Mock) or one month (Ottaway and Foote) after severance or thrombosis of femoral or iliac arteries, with successful subsequent amputation above the knee—i. e., far down within the refrigerated region; (*b*) suggestive indications that amputations for arterial occlusion below the knee might sometimes be avoided by sufficiently prompt use of refrigeration (Bowers); (*c*) Blakemore's successful restoration of dogs' legs after amputation and storage in an ice box for twenty-four hours, suggesting that cleanly severed human limbs or those with only the arteries destroyed may be thus preserved for perhaps several days during transportation to a suitably equipped hospital. Elsewhere I shall discuss further the misconceptions which have resisted the weight of facts and which, together with technical faults, explain why refrigeration has not yet been properly appreciated and used in a single large surgical clinic. Particular stress should be placed on the unique ability of cold to control simultaneously pain, shock, infection and tissue devitalization in various major traumatisms, on the saving of more tissue in burns than by any other treatment and on similar benefits in limb embolisms, including an unprecedented lengthening of the time limits for successful embolectomy.

FREDERICK M. ALLEN, M.D., New York.

*To the Editor:*—Dr. Frederick M. Allen's great contribution toward the proper management of suddenly or gradually devitalized limbs lies in his insistence on the deleterious effects of increased temperatures on the viability of ischemic extremities.

Daily one encounters heat cradles, hot water bottles and electric pads applied after occlusion of arterial circulation. These measures accelerate gangrene and often necessitate amputation which could have been avoided.

It is also true that the ischemic, pregangrenous or frankly gangrenous extremity, when packed in ice, will become painless; absorption from such extremities is slowed or interrupted, as evidenced by the drop in the patient's temperature. As pointed out in my discussion, this is a valuable procedure, allowing the surgeon time to control the patient's diabetic status, his depletion of blood or electrolytes. Where I thoroughly disagree with Dr. Allen is in his advocacy of using refrigeration as anesthesia for amputation and for maintaining refrigeration around extremities which may still be viable.

My discussion of course was of Dr. Freeman's paper and not of Dr. Allen's method of refrigeration. Dr. Allen has repeatedly and forcefully expressed himself on the subject and marshalled the evidence contained in his present letter. Part of the evidence is not germane to the present discussion, since it is sufficiently known that well vascularized organs or parts may be kept for many hours or days in suspended animation with a depressed metabolism and decreased oxygen requirement. Even here the increased capillary permeability and plasma exudation following the termination of the exposure to cold produces the immersion limb syndrome, the deleterious late effects of which are sufficiently known. The immersion limb with its neuropathy, its muscle and connective tissue fibrosis, its vasomotor changes, represents one of the most intractable sequelae to prolonged exposure to cold. The affected soldiers and sailors had no previous impairment of circulation.

When we are dealing, however, with ischemic extremities, which was the topic of discussion, the vascular and nerve damage is obviously of increased severity. Dr. Allen quotes the experiments of Brooks and Duncan, whose conclusions really pointed to a deterioration of viability when the refrigeration was removed. He has ignored the studies of Large and Heinbecker and Bruneau and Heinbecker (*Ann. Surg.* 120: 707-715, 715-726, 726-741 [Nov.] 1944), who showed that refrigeration delays wound healing and decreases the power of resistance of tissues to bacterial invasion. In the dog, after cooling to 6 C. the subcutaneous tissue failed to show the inflammatory response usually elicited by inoculation with hemolytic streptococci; however, after cooling had been stopped, definite harmful effects were noted. Also during the cooling period, there was no reaction on the part of the tissues to the trauma of an incision and subsequently there was a definite lag in wound healing. Finally, nerve degeneration was obvious in limbs of the experimental animal cooled at 6 C. for ninety-six hours. Their careful experimental and clinical observations should definitely serve as a warning against the use of chilling as a procedure for anesthesia. Adding the tourniquet to the chilling, which seems part of the procedure, is also objectionable, not only from the standpoint of circulation but because of the danger of tourniquet paralysis. You only have to have one tourniquet paralysis never to forget it.

There is nothing simpler than to wrap an ischemic extremity in cotton from toes to midthigh, maintaining body temperature and preventing heat loss by evaporation. It is quite possible that special apparatus, delivering an environment of 60 to 65 F., might be occasionally useful. But the chilling of the extremity to 40 F. (5 C.), which Dr. Allen has postulated in his writings and defended with such vigor and skill, is definitely injurious when applied for several hours and days to an ischemic extremity; such extremities may have survived this injury due to chilling not because of it, but in spite of it.

Geza de Takats, M.D., Chicago.

## EXPERIMENTAL FEEDING OF PROTEINS

*To the Editor:*—In the editorial on Nutritive Value of Proteins in the January 29 issue of The Journal, page 311, experiments are cited in which intact proteins were supplemented with a free amino acid (cysteine).

At the American Medical Association Convention, in Atlantic City in June 1947, Dr. Paul Cannon described experiments on the utilization of a solution of a biologically adequate mixture of amino acids. When one of the essential amino acids was removed from the mixture and given one, two or four hours subsequent to administration of the balance of the mixture, utilization was impaired and negative nitrogen balance occurred. Dr. Cannon concluded that amino acids are available for utilization for not more than an hour or two after their introduction into the blood stream.

An abstract (Kuiken, K. A., Lyman, C. M.: Availability of Amino Acids in Some Foods, *J. Nutrition* **36**: 359 [Sept.] 1948) which appeared in the January 22 issue of The Journal, page 260, emphasizes this point more strongly: "The ultimate synthesis of body protein from the amino acids made available through digestion and absorption is dependent on a third factor, namely, the simultaneous appearance in the blood stream of each of the essential amino acids in suitable proportions. Protein synthesis does not occur unless a complete mixture of the essential amino acids is present at one time."

Free amino acids are crystalloids, and abundant evidence attests to the fact that they are absorbed from the gastrointestinal tract at a rate comparable to that of dextrose.

When cysteine is fed with an intact protein, it may well be expected that it will be absorbed and largely deaminated several hours before completion of the absorption of the amino acid released on digestion of the protein.

Would it not appear that the foregoing factors should be given adequate consideration (1) in conducting tests of the nature described by Dr. Hess and his associates, and (2) in arriving at conclusions from such tests in which adequate provision is not made to assure simultaneous availability of all of the amino acids fed?

John F. Seward, Ph.G., Detroit.

## ESSENTIAL HYPERTENSION

*To the Editor:*—In discussing the article by Wilkins, Freis and Stanton, "Essential Hypertension" (J. A. M. A. 140: 261-265 [May 21] 1949) Dr. S. K. Robinson quotes me as saying, "Ninety per cent of essential hypertension is of nonrenal origin." In the presentation referred to before the Section on Pathology and Physiology at the annual meeting of the American Medical Association in June 1948, I stated that approximately 10 per cent of persons with essential hypertension succumb to renal failure (malignant hypertension). I further emphasized that essential hypertension is probably a generic classification and that current research on pathogenesis points to neurogenic, renal and endocrine factors, each of which may ultimately delineate a future, separate species of hypertension.

Contrary to Dr. Robinson's belief, "there will not be much progress in hypertension as long as one has the idea that a primary disease like hypertension can be produced by a vegetative organ like the kidney," I believe that some of the most significant recent progress in our understanding of hypertension has been stimulated by the concept that a renal mechanism may be operative in essential hypertension. The numerous similarities between experimental renal (Goldblatt) hypertension and essential hypertension as seen in many patients do not necessarily indicate even a partial common pathogenesis but are suggestive of this possibility. Moreover, present research by others and by our group on the pathogenesis and treatment of experimental renal hypertension will lead to a therapy worthy of trial in essential hypertension. Such therapy will afford evidence supporting renal pathogenesis in any patients responding favorably under carefully controlled conditions. When this therapy is available, I predict that some patients will be benefited in a manner similar to the excellent responses seen in our renal hypertensive dogs, but whether these patients will constitute 10 per cent, 30 per cent or more of patients with essential hypertension remains to be determined.

George E. Wakerlin, M.D., Chicago.

# Council on Medical Education and Hospitals

## NEW HOSPITALS REGISTERED

*The following hospitals were registered by the Council on* Medical Education and Hospitals of the American Medical Association at its meeting in Atlantic City, June 4, 1949:

Barber Hospital, Butler, Ala.
Chickasaw Infirmary, Chickasaw, Ala.
Hamil Clinic-Hospital, Decatur, Ala.
Blake Manasco Hospital, Haleyville, Ala.
Shelby Clinic-Hospital, Wilsonville, Ala.
Grand Canyon Hospital, Grand Canyon, Ariz.
El Sereno Lodge Sanitarium, Phoenix, Ariz.
Reid-Barnett Hospital, Arkadelphia, Ark.
Verser Clinic-Hospital, Harrisburg, Ark.
Harris Hospital and Clinic, Newport, Ark.
Corcoran Municipal Hospital, Corcoran, Calif.
Long Beach General Hospital, Long Beach, Calif.
Accadia Sanitarium-Hospital, Los Angeles
Midway Hospital, Los Angeles
Rose-Netta Hospital, Los Angeles
Children's Convalescent Hospital, San Diego, Calif.
Tracy Community Memorial Hospital, Tracy, Calif.
Glenwood Springs Hospital, Glenwood Springs, Colo.
Wyndover Hospital, Stamford, Conn.
Hernando County Hospital, Brooksville, Fla.
Kissimmee Hospital, Kissimmee, Fla.
Page and Fowler Private Hospital, Orlando, Fla.
Memorial Hospital, Panama City, Fla.
Municipal Hospital, Port St. Joe, Fla.
Hutchins Memorial Hospital, Buford, Ga.
Chamblee Hospital, Chamblee, Ga.
Arrendale Hospital, Cornelia, Ga.
Heard County Memorial Hospital, Franklin, Ga.
Atkinson Memorial Hospital, Woodbine, Ga.
Hazlecrest *General Hospital*, Hazlecrest, Ill.
Maple Lane Nursing Home, Macomb, Ill.
Jefferson County Hospital, Mount Vernon, Ill.
Mahoney Convalescent Home, Peoria, Ill.
Xavier Hospital, Dubuque, Iowa
Hovenden Memorial Hospital, Laurens, Iowa
Kingman Memorial Hospital, Kingman, Kan.
Dechairo Hospital, Westmoreland, Kan.
Rosary Hospital, Campbellville, Ky.
Our Lady of Mercy Hospital, Owensboro, Ky.
Prestonsburg General Hospital, West Prestonsburg, Ky.
Jones-McConnell Clinic-Hospital, Bunkie, La.
Clinton Infirmary, Clinton, La.
Caldwell Hospital and Clinic, Columbia, La.
Douglas Clinic and Hospital, De Quincy, La.
Sandifer Sanitarium, Logansport, La.
Legion Memorial Hospital, Newellton, La.
Everett-Biggs Clinic Hospital, Oak Grove, La.
*Ardoin Sanitarium, Ville Platte, La.*
Children's Hospital, Hagerstown, Md.
Cranbrook Infirmary, Bloomfield Hills, Mich.
Hynds Convalescent Hospital, Flint, Mich.
Mason General Hospital, Mason, Mich.
*Hart Hospital, Monticello, Minn.*
Riverview Memorial Hospital, St. Paul
Leonard Wright Sanatorium, Byhalia, Miss.
North Mississippi Hospital, Holly Springs, Miss.
Masonite Hospital, Laurel, Miss.
Leland City Hospital, Leland, Miss.
Atwood Hospital, Carrollton, Mo.
Doctors Hospital, Poplar Bluff, Mo.
Liberty County Hospital, Chester, Mont.
Community Memorial Hospital, Sidney, Mont.
John B. Simons Hospital, Whitefish, Mont.
Thayer County Memorial Hospital, Hebron, Neb.
Wakefield Community Hospital, Wakefield, Neb.
Warren Hospital, Phillipsburg, N.J.
Espanola Hospital, Espanola, New Mexico
St. Ann's Hospital, Hot Springs, N. Mex.
Lehman Hospital, Portales, N. Mex.
Bensonhurst Nursing Home, Brooklyn
*Corinth Hospital, Corinth, N. Y.*
Horace Harding Hospital, Elmhurst, N. Y.
Brookhaven National Laboratory Hospital, Upton, L. I., N. Y.
State Hospital, Butner, N. C.
Central Carolina Convalescent Hospital, Greensboro, N. C.
Stokes Clinic Hospital, Walnut Cove, N. C.
Powers Lake Community Hospital, Powers Lake, N. D.
Meigs General Hospital, Pomeroy, Ohio
Women's and Children's Hospital, Chickasha, Okla.
Northwest Community Hospital, Mooreland, Okla.
Wheeler Hospital, Wheeler, Ore.
Woodburn Hospital, Woodburn, Ore.
Tyler Memorial Hospital, Meshoppen, Pa.
Tel-Aviv for Elderly People, Philadelphia
Eye, Ear, Nose and Throat Center, Scranton, Pa.
Eugenia Memorial Hospital, Whitemarsh, Pa.
Roberts County Community Hospital, Sisseton, S. D.
Walter Pyle Clinic Hospital, Franklin, Tenn.
Milligan Clinic-Hospital, Jefferson City, Tenn.
Conger Clinic Hospital, Lexington, Tenn.
Medical Clinic and Hospital, McMinnville, Tenn.
Bellaire Hospital, Morristown, Tenn.
Yarberry Hospital, Sevierville, Tenn.
Cullen C. Woods Memorial Hospital, Waynesboro, Tenn.
Brooks Clinic-Hospital, Atlanta, Texas
Medical Arts Clinic-Hospital, Big Spring, Texas
Buda Clinic and Hospital, Buda, Texas
Castroville Hospital, Castroville, Texas
Crane County Memorial Hospital, Crane, Texas
Health Center of Southern Methodist University, Dallas, Texas
Oak Lawn Medical and Surgical Hospital, Dallas, Texas
Wilkinson Hospital and Clinic, Dallas, Texas
Freestone County Cooperative Hospital, Fairfield, Texas
Mercy Memorial Hospital, Falfurrias, Texas
J. F. Gipson Hospital, Fort Stockton, Texas
*Dorsey Hospital, Fort Worth, Texas*
Dora Garrison Health Center, Garrison, Texas
Hanna Hospital, Glen Rose, Texas
Huntsville Memorial Hospital, Huntsville, Texas
Brindley Clinic-Hospital, Kingsville, Texas
Floyd County Cooperative Hospital, Lockney, Texas
Searls Hospital, Marfa, Texas
David Granberry Memorial Hospital, Naples, Texas
*Howard Hospital, Pearsall, Texas*
Valley Convalescent Center, Pharr, Texas
L. W. Spikes Hospital, Ralls, Texas
Good Samaritan Hospital, San Antonio, Texas
San Augustine Memorial Hospital, San Augustine, Texas
Bruce Clinic-Hospital, Sulphur Springs, Texas
Crippled Children's Hospital, Waco, Texas
Adams Eye, Ear, Nose and Throat Clinic-Hospital, Wichita Falls, Texas
*Wolfe City Community Hospital*, Wolfe City, Texas
Milford Hospital, Milford, Utah
Roosevelt Hospital, Roosevelt, Utah
Chitwood-Moore Clinic Hospital, Wytheville, Va.
Pinel Foundation Sanitarium, Seattle
Sutton General Hospital, Sutton, W. Va.
Clintonville Community Hospital, Clintonville, Wis.
Margo Hospital and Convalescent Home, Milwaukee
Mount Edgecumbe Medical Center, Mount Edgecumbe, Alaska
Seward Sanatorium, Seward, Alaska
Wahiawa General Hospital, Wahiawa, Hawaii
Hospital Dr. Maldonado Sierra, Hato Rey, P. R.

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various Centers. Sept. 12-14. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc. *Oral.* Denver, Oct. 16-20. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

American Board of Internal Medicine: *Written.* Oct. 17. Asst. Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

American Board of Obstetrics and Gynecology, Inc. *Part I.* Various Centers. Feb. 3. Final date for filing application is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: St. Louis, Oct. 15-19; Boston, December. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Final date for filing application for Part II is Aug. 15. Address: Sec.-Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

American Board of Pathology: Chicago, Oct. 7-8. Final date for filing application is Sept. 1. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: *Oral.* Cleveland, Sept. 16-18; New *York City, Oct. 21-23; Chicago, Dec. 9-11. Sec., Dr. John* McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Preventive Medicine and Public Health: *Parts I and II.* New York, Oct. 22-24. Final date for filing application is July 22. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Psychiatry and Neurology, Inc. *Special Examination,* Chicago, Oct. 24-25. December, New York City. Final date for filing applications is Sept. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Cincinnati, Sept. 28-Oct. 2. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, October 26. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written,* December. *Oral and Clinical.* Chicago, Feb. 11-15. Final date for receipt of case histories is Sept. 1, 1949. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18.

### BOARDS OF MEDICAL EXAMINERS

ALASKA: * Juneau, Sept. 6. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

DISTRICT OF COLUMBIA: * *Examination.* Washington, Nov. 14-15. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

GUAM: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

MONTANA: Helena, Oct. 3-5. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

NEVADA: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

NEW HAMPSHIRE: Concord, Sept. 8-9. Sec., Dr. J. S. Wheeler, 107 State House, Concord.

NEW MEXICO: * Santa Fe. Oct. 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

PENNSYLVANIA: *Examination.* Philadelphia and Pittsburgh, July. Acting Sec., Mrs. B. G. Steiner, 351 Education Bldg., Harrisburg.

PUERTO RICO: San Juan, Sept. 6-10. Sec., Dr. Luis Cueto Coll, Box 3717, Santurce.

SOUTH DAKOTA: * *Examination.* Pierre, July 19. Sec., Dr. G. J. Van Heuvelen, Capitol Bldg., Pierre.

WASHINGTON: * Seattle, July 18-20. Sec., Mr. Edward C. Dohm, Department of Licenses, Olympia.

* Basic Science Certificate required.

### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: Juneau, Aug. 28. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

ARKANSAS: *Examination.* Little Rock, Oct. 4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

DISTRICT OF COLUMBIA: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

FLORIDA: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

MICHIGAN: *Examination.* Detroit and Ann Arbor, Oct. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing 15.

NEBRASKA: Omaha, Oct. 4-5. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln 9.

OREGON: Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

RHODE ISLAND: *Examination.* Providence, Aug. 10. Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

WISCONSIN: Milwaukee, Sept. 24 and Dec 3. Sec., Prof. W. H. Barber, Ripon College, Ripon.

# Bureau of Legal Medicine and Legislation

## MEDICOLEGAL ABSTRACTS

**Malpractice: Death Following Administration of Chloroform.**—The plaintiff filed suit for damages for the death of her 7 year old daughter alleged to have resulted from the malpractice of the defendant physician. From a judgment in favor of the physician, the plaintiff appealed to the court of appeal of Louisiana.

The plaintiff's daughter was playing with some other children during the afternoon recess of the Franklinton School, and, as a result of being pushed by one of the children, she fell and broke her right arm. The principal of the school made an attempt to locate the child's mother by calling places where she worked, and, being unable to locate her, he then telephoned the defendant physician who told him to bring the child to his office. The principal testified that he felt the child needed medical attention at once, and, after attempting to locate the mother and failing, he thought it best to get the child to a doctor as soon as possible. Although the plaintiff lived only a mile from the school, he made no attempt to locate her at home as he did not know whether he would find her there and he "was most interested in getting the little girl to a physician as quickly as possible in order that her wrist might be set." He was accompanied to the defendant's office by Miss Thelma Wood, another teacher, who remained with the child during the entire operation and until after she died.

The law seems to be well settled, said the court of appeal, "That where the physician or surgeon uses all the customary precautions practiced by the profession in the particular locality, no liability is incurred. Thus, the highest degree of skill and knowledge is not required in every case, but only such skill and knowledge and practices as are common with the profession in the locality where the physician or surgeon happens to practice." The court of appeal then quoted from an opinion by Judge Taft, then of the United States Circuit Court of Appeals, in the case of *Ewing v. Goode*, 78 F. 442, in which Judge Taft said: "A physician is not a warrantor of cures. If the maxim 'res ipsa loquitur' were applicable to a case like this, and a failure to cure were held to be evidence, however slight, of negligence on the part of the physician or surgeon causing the bad result, few would be courageous enough to practice the healing art, for they would have to assume financial liability for nearly all the 'ills that flesh is heir to.' . . . The rule is well established that a physician or dentist cannot be held liable for the death of a patient under his treatment, where there is no evidence to show negligence or lack of skill on his part, sufficient to overcome the prima facie case in his favor made by the evidence that the treatment adopted by him was the usual and customary one. The fact that a patient died in such circumstances does not raise any presumption of negligence or lack of skill on his part." From this statement of the law, the Louisiana court continued, it is necessary to examine the record to ascertain whether or not the defendant was guilty of malpractice in failing to make a proper examination of the child before placing her under the anesthetic, in giving or causing to be given an overdose of chloroform, or in failing to obtain the consent of the mother before undertaking the treatment of the child.

The defendant testified that after determining the kind and nature of the fracture, he decided that he would use chloroform in setting the arm. Before giving chloroform, he always examines the heart of the patient, and in this instance, he said, he examined this child's heart by determining the size as near as possible, the rate of the pulse, the character of the pulse and listening to (termed "auscultation") the heart with a stethoscope. He also listened to the lungs for any pathosis that might be present. The physician and surgeon at the Elizabeth Sullivan Memorial Hospital in Bogolusa testified that prior to giving an anesthetic to anyone he would ascertain how the heart was functioning; that is, he would listen to see whether the heart was functioning normally, to determine whether there was any tuberculosis or cold that might be aggravated by an inhalation type of anesthesia, and that he would make this examination with a stethoscope. That is exactly the same examination made by the defendant before administering the anesthetic to the child in this case, said the court, and there was no testimony in the record that any different examination was ever made by any other physician in that parish or neighborhood. Therefore the defendant was not guilty of malpractice on that count.

As to the second charge, that the chloroform was administered by an incompetent assistant and the child was given an overdose, the court continued, the record revealed that with the facts and circumstances in this case chloroform was the recognized anesthetic to be given by the doctors in the surrounding countryside. The defendant's office was heated by an open-face gas heater, and it was agreed by all medical witnesses that ether could not be used around an open flame as it is very highly inflammable and, in such circumstances, might cause an explosion of the patient's lungs. Two other physicians testified that chloroform was the proper anesthetic to use with the facts in this case and that, in the same circumstances, they would have used it also. This testimony sustains the defendant in his choice of the use of chloroform. Mrs. Sweeney, the defendant's office nurse, testified that she administered the anesthetic. She had trained in a hospital for twenty-six months and only lacked ten months of finishing what would have entitled her to a certificate as a registered nurse. She had been giving the anesthetic for the defendant in his practice ever since she was employed by him in 1933. In our opinion, the court of appeal concluded, the testimony showed that she was well versed in the administration of anesthetics and the effect of the same and the different stages involved in general anesthesia. She was competent to give the chloroform in the present case, and, furthermore, she administered it under the direction of the defendant who was present at the time she gave it.

The plaintiff testified that the child's nose, face and mouth were burned and that the chloroform was given direct from the bottle and that there was no mask used. This testimony, however, was entirely refuted by the defendant, his nurse, Miss Wood, the teacher who remained with the child until her death, the coroner, the undertaker and his assistant who embalmed the child, and Miss Stringfield, another teacher in the grade school who saw the child after she died. The testimony showed that the chloroform was given by the drip method. A regular mask with gauze on it was placed over the patient's face and the chloroform dropped on this gauze.

The defendant and his nurse both testified that the child went from the first stage of anesthesia, which is shown to be "before you induce sleep," directly to the last stage, which is death. Another physician testified that some patients are hypersensitive to certain anesthetics and that there is no way of determining this prior to application. There is no doubt from the testimony in this case, continued the court, that the plaintiff's daughter was hypersensitive to chloroform, which produced an immediate toxic condition resulting in her death and which was diagnosed by the coroner as chloroform poisoning. When chloroform is well diluted with air and the patient dies, it is with respiratory failure first and cardiac failure later or within several minutes, due to the lack of oxygen. When chloroform is administered too quickly and in too large amounts, so that it is not well diluted with air, the heart stops beating first. In the instant case, there was respiratory failure first and the heart was beating for several minutes afterward. It is apparent, therefore, that this child did not die from an overdose of chloroform but as a result of a toxic condition produced by the chloroform.

The plaintiff next charged that the defendant did not endeavor to resuscitate the child. Miss Wood and the defendant's nurse testified that artificial respiration was used as well as hypodermics, and the defendant testified that he "immediately began trying to revive the child by means of injections of epinephrine into the vein and giving artificial respiration because the heart was still beating, but the child was not breathing. This did not work so I gave a hypodermic of 1/130 grain (0.5 mg.) of atropine sulfate. Then I continued to give artificial respiration in the usual manner—I think by three different methods: lying prone with rhythmic pressure and releasing the lower ribs posteriorly and working the arms back and forth to and from the body; putting the child over my shoulder and taking her back; these methods failed and I then gave the child an injection of coramine® (nikethamide); still no breathing, the child's heart was getting weaker. I injected 0.5 cc., I am not positive about the amount, it could have been 1 cc., into the heart muscles." There is no doubt from the testimony, concluded the court of appeal, that everything was done to revive the child.

Finally, there remains to be decided the question of whether the defendant is liable by reason of the fact that he failed to obtain the consent of the mother, who was a widow, before undertaking the treatment. "The general rule that a surgeon operates at his peril without first obtaining the consent of his patient or someone legally authorized to consent for him is qualified in its application by most courts in cases of emergency or unanticipated conditions where some immediate action is found necessary for the preservation of the life or health of the patient, and it is impracticable to first obtain consent to the operation or treatment which the surgeon deems to be immediately necessary. . . . In such a case, where the emergency endangers the life or health of the patient, it is the surgeon's duty to do that which the case demands within the usual and customary practice among physicians and surgeons in the same or similar localities, without the consent of the patient or his parents." (41 American Jurisprudence 222.) In this case, the court pointed out, the principal called the canning plant where he understood the mother was working and Dr. T. C. W. Magee's office, in an effort to locate her before he called the defendant. We are of the opinion that an emergency existed and that in such emergency the defendant was fully justified to proceed in the manner in which he did without the express consent of the child's mother. The defendant followed the usual and customary practice among physicians and surgeons in the same locality.

The judgment of the trial court in favor of the defendant physician was accordingly affirmed.—*Wells v. McGehee, 39 So. (2d) 196 (La., 1949).*

# Medical Motion Pictures

## FILM REVIEWS

**An Improved Technic for the Operative Treatment of Anorectal Lesions.** —16 mm., silent, color, 1,200 feet (1 reel or 3 reels), showing time forty-four minutes. Prepared in 1947-1948 by Louis E. Moon, M.D., F.A.C.S., Associate Professor of Surgery, Head of Department of Proctology, and J. B. Christensen, M.D., B.S., Instructor in Surgery, Associate in Department of Proctology, Creighton University School of Medicine, with the assistance of William H. Hardman, M.D., M.S., Creighton Memorial St. Joseph's Hospital, Omaha. Produced by Merrin W. LaRue, Inc., Chicago, through a grant by and procurable on loan from the William S. Merrell Company, Lockland Station, Cincinnati 15.

This motion picture presents the principles of physical diagnosis in anorectal inflammatory disease, the underlying pathogenesis and the proper surgical management of these conditions, especially the more common ones such as hemorrhoids, anal fissures, anal abscesses and fistulas.

Reel I deals with the proctologic examination. The anatomy of the region is clearly depicted by animated illustrations. Patients are used in demonstrating some of the more common pathologic conditions.

Reel II gives the essential points necessary for surgery, namely; (*a*) adequate facilities and qualified personnel, (*b*) preparation and position of patient and (*c*) anesthesia to produce anal relaxation, thus assuring adequate exposure of the operative area. It portrays the author's procedure for removal of internal and external hemorrhoids.

Reel III illustrates the surgical indication and management for anal fissures, abscesses and fistulas. The advantages of the technics are summarized at the end of each operative procedure.

Of excellent teaching value is the correlation of anorectal anatomy, pathogenesis of anorectal inflammatory disease and the surgical management of the various types of such disease. The stress laid on the importance of postoperative care is also well brought out in this film.

The use of fistulectomy rather than fistulotomy is disappointing for the reason that fistulotomy is considered adequate in the management of an anal fistula and is a much safer procedure especially in the hands of the less experienced surgeon. From a teaching point of view, it would have been much better to demonstrate the fistulous tract from its primary to its secondary opening, rather than vice versa as shown in the film.

In spite of these few exceptions and criticisms, this excellent production is suitable for showing to state and county medical meetings, residents, interns and fourth year medical students.

The photography and drawings are excellent throughout the entire film.

**The Vaginal and Cervical Smear.** A prebiopsy aid toward the early detection of carcinoma. 16 mm., silent, color, 1,025 feet (1 reel), showing time thirty minutes. Prepared in 1948 by Clair E. Folsome, M.D., F.A.C.S., under the guidance of George N. Papanicolaou, Ph.D., M.D., Cornell University Medical College, New York. Procurable on loan from Ortho Research Foundation, Graphic Arts Division, Raritan, N. J.

This film portrays the interpretation of cytologic appearances in smears obtained in cancer of the cervix and uterus and in a variety of conditions which may have to be considered in the differential diagnosis. Reproductions of normal structures including schematic drawings and reproductions of histologic preparations and of smears are illustrated, together with gross pictures of the normal cervix and of benign lesions. The technic of preparation of smears is shown only casually.

The reproduction of gross views of cancerous lesions and of some of the smears leaves much to be desired. The white and deep purple colors present an unnatural appearance.

The majority of scenes are still pictures, and one has the impression that a series of lantern slides or filmstrips would better serve the purpose. The photomicrographs of the cervix are poor to good.

The term "malignancy" is used throughout, whereas "cancer" is the more appropriate designation.

This film can be recommended for orientation of the gynecologists and medical students as an introduction to the much discussed topic of prebiopsy by means of study of desquamated cells.

# Current Medical Literature . . .

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Surgery, New York

**77**:137-270 (Feb.) 1949

Indications for Pulmonary Resection: Special Reference to Extent of Operation. E. A. Naclerio.—p. 140.
Diaphragmatic Hernia: Review of Literature and Report of 2 Unusual Cases. E. H. Ellison.—p. 152.
Abdominal Trauma from Standpoint of Railway Surgeon. I. Cohn.—p. 162.
Clinical Experiences with Chlorophyll Preparations with Particular Reference to Chronic Osteomyelitis and Chronic Ulcers. E. B. Carpenter.—p. 167.
*Strangulated Femoral Hernia: Relationship of Contents of Hernial Sac to Clinical Manifestations and Prognosis. J. P. Jarboe and J. H. Pratt.—p. 172.
Arterial Injuries: Analysis of Immediate and Late Results of Arterial Injury Based on Military Experience. C. E. Gardner Jr.—p. 181.
Vaginal and Cervical Smears in Uterine Malignancy. M. Schram and S. Di Palma.—p. 191.
Hypothermia in Hyperthyroidism. C. B. DeCourcy and J. L. DeCourcy.—p. 199.
Missed Abortion: Evaluation of Conservative Management. S. Lubin and R. Waltman.—p. 202.
Treatment of Large Bowel Fistula Secondary to War Wounds. R. J. Chodoff and S. A. Kornblum.—p. 208.
Diverticulum and Abscess of Female Urethra. F. R. Cole.—p. 212.
Fractures of Patella. M. B. Noyes and W. S. Mozden.—p. 215.
*Recurrent Dislocation of Shoulder: Modification of Bankhart Capsulorrhaphy. C. A. Luckey.—p. 220.
Treatment of Acute Appendicitis with Perforation. R. Huebner.—p. 223.
*Treatment of Severe Singultus. F. G. Barnard.—p. 230.
Reduction of Mortality in Intestinal Obstruction. W. R. Moses.—p. 235.

**Strangulated Femoral Hernia.**—Jarboe and Pratt observed that the viscera most often incarcerated in strangulated femoral hernias were portions of small intestine and omentum. The relationship of the contents of the hernial sac to the fatality rate reveals that in 64 of the 104 cases parts of the small intestine were found in the hernial sac and that 23, or 36 per cent, of these 64 patients died, whereas of the 40 patients in whom viscera other than the small intestine were lodged in the femoral ring only 1 died (2.5 per cent). Extremely high fatality rate was associated with the presence of gangrenous portions of small intestine in the hernial sac. There were 19 deaths among the 26 patients in whom the strangulated segment of the small intestine was gangrenous, or a fatality rate for this group of 73.1 per cent. The contents of the hernial sac found in 104 strangulated femoral hernias indicate a definite relationship between the origin and pathologic condition of the affected viscera and the fatality rate. In cases of strangulation of parts of the small intestine, when surgery has been delayed and irreversible pathologic changes have taken place, the prognosis is very grave for a person of any age. Since physical resistance in the aged is materially lowered, such persons are benefited most by early surgical treatment, but the prognosis is influenced more by the condition of the strangulated viscera than by the factor of age alone.

**Modification of Bankhart Capsulorrhaphy.**—Luckey points out that the numerous modifications of the Bankhart procedures that have been described in recent years advocate either a new instrument to make the necessary holes in the glenoidal rim or various forms of internal fixation of the capsule, such as tacks, screws and staples. The author has used tacks, but the eventual fate of these tacks is still unknown and a patient may attribute residual postoperative distress to these radio-opaque objects. For these reasons the author has resorted to the use of the "pull-out" wire as described by Bunnell. The author describes and illustrates the technic he uses, but claims no originality. He has used the "pull-out" wire in 15 cases and has never observed infection following its use. At first small caliber wire was used, but in 1 patient the wire had broken off posteriorly just below the skin. That portion of the wire that held the capsule in contact with the scapula had not moved, so the final result was not impaired. Since that time, heavier wire has been used, usually no. 26, or, when this is not available, no. 24.

**Treatment of Severe Singultus.**—Barnard points out that persistent hiccup may threaten life, particularly when it complicates surgical interventions. When conservative measures fail, surgical treatment, usually bilateral phrenectomy, is resorted to. However, the crushing or resection of the phrenic nerve is a serious procedure and leaves the elderly patient in a handicapped state. The author shows that hiccup may be relieved by the application of two small sponge electrodes to the proper sites of the affected patient and the administration of pulsating galvanic sinusoidal current at a comfortable tolerance of 20 to 30 pulsations per minute. This produces stimulation of the phrenic nerve and contracts the diaphragm. The exact modus operandi by which the hiccup is stopped is not clear, but apparently the impulses running to the diaphragm are interrupted and probably the muscle itself is tired as a result of the galvanic stimulation. The author describes the technic of this treatment and presents 5 cases to illustrate the simplicity of technic and its potentialities. While some patients may not respond to this simple therapeutic aid, the results obtained have been uniformly excellent and merit further investigation.

### American Practitioner, Philadelphia

**3**:325-388 (Feb.) 1949

Infectious Polyneuritis. N. S. Stearns.—p. 325.
Prolonged Auricular Tachycardia: Report of Case Persisting for 132 Days. E. K. Doak.—p. 338.
Advances in Treatment in Neurologic Diseases. A. Silverstein.—p. 344.
Metastatic Tumors of Central Nervous System. G. Wilson and C. Rupp.—p. 350.
*Importance of Sodium Intake in Management of Cardiac Failure. M. Sokolow.—p. 353.
Functional Uterine Bleeding. J. A. Hepp.—p. 361.
Newer Forms of Cutaneous Therapy. W. E. Wooldridge, H. L. Joseph and R. S. Weiss.—p. 363.
Nature and Function of Emotions, a Concept. S. H. Tyler.—p. 368.

**Sodium Intake in Cardiac Failure.**—Sokolow reports 3 patients, 2 women aged 49 and 47, respectively, and 1 man aged 52, with symptoms and signs suggesting congestive heart failure. The first patient was desperately ill with severe orthopnea, cyanosis, ascites, alternating pulse and gallop rhythm. In view of her previous episodes of cardiac failure the prognosis appeared poor. The tremendous loss of fluid within three days of beginning a salt-free diet and the rapid restoration to essentially normal cardiac function which resulted were striking. In the second female patient with a long-standing history of hypertension, the absence of cardiac enlargement, the essentially normal electrocardiogram and the presence of a normal venous pressure cast considerable doubt on the diagnosis of congestive heart failure. Dietary study revealed a high intake of sodium. By reducing the sodium in her diet, the patient became free of all symptoms, continued to be ambulatory and was able to increase her activities. In the third patient long hours of erect posture combined with excessive salt intake produced peripheral edema simulating congestive heart failure. Correctly interpreted and treated by the limitation of salt, the edema and dyspnea completely cleared and the patient was enabled to work again full time at his usual occupation without symptoms. Not all cases of cardiac failure require the radical restriction of sodium in the diet to 350 mg. which is in use at the University of California Hospital. If the cardiac failure is slight and the cardiac reserve is good, modest restriction of the sodium intake will usually suffice. In severe cardiac failure the patient may be unable to excrete even small amounts of sodium and the sodium intake must be drastically reduced. If the patient has both renal insufficiency and cardiac failure, a diet low in sodium may be dangerous and increased care and judgment are required to determine the amount of salt which will be best for both functions.

### American Review of Tuberculosis, New York

59:1-112 (Jan.) 1949

Efficiency of Gauze Masks in Protection of Rabbits Against Inhalation of Droplet Nuclei of Tubercle Bacilli. M. B. Lurie and S. Abramson. —p. 1.

Pulmonary Resection in Treatment of Tuberculosis. J. W. Gale, Helen A. Dickie and A. R. Curreri.—p. 10.

*Decortication of Lung in Patients with Pulmonary Tuberculosis. P. V. O'Rourke, E. J. O'Brien and W. L. Tuttle.—p. 30.

Pulmonary Tuberculosis Involving Lower Lobes. E. Rothstein.—p. 39.

Poor Results with Artificial Pneumothorax in Lower Lobe Tuberculosis. E. Rothstein.—p. 50.

Prognosis of Inspissated Cavities. R. S. Study and P. Morgenstern. —p. 53.

Effect of Nontuberculous Pulmonary Inflammation on Pulmonary Tuberculosis. O. S. Baum and L. F. Baum.—p. 68.

Supernumerary Rib: Report of Case. S. Jacobs.—p. 76.

Tuberculosis Case-Finding Program in Erie County, New York. W. H. Handy and W. D. Crage.—p. 78.

Isolation of Three Different Proteins and Two Polysaccharides from Tuberculin by Alcohol Fractionation: Their Chemical and Biological Properties. Florence B. Seibert.—p. 86.

Comparison of Immunogenicity for Guinea Pigs of BCG Cultured Intermittently and Continuously in Presence of Bile. I. S. Neiman and Nelda Holmgren.—p. 102.

**Decortication in Pulmonary Tuberculosis.** — O'Rourke and his co-workers say that the results obtained during the war with the decortication of the lung in the management of organizing hemothorax suggested that this technic could be applied successfully in certain tuberculous patients. This study is concerned with 43 cases of pulmonary and pleural tuberculosis in which decortication was between January 1946 and May 1948. Observations on these cases demonstrated the presence of a "peel" similar to the organized exudate found encasing the lung in organizing hemothorax. Decortication has been restricted to the complications of tuberculous pleurisy in 9 patients and the complications of the therapeutic pneumothorax in 27 patients. In addition, decortication was done in conjunction with a lobectomy in 7 patients. The success or failure to remove a "peel" does not seem to be related to the duration of the pneumothorax but rather to the amount of the peripheral pulmonary disease. Twenty-eight lungs were completely decorticated and in 15 a partial decortication was performed. Streptomycin was not available at the beginning of this study, but since becoming more plentiful has been used routinely. The results of decortication in the 43 patients have been classified as: failure, 4; improved, 5; good, 14, and excellent, 20. The present status of the patients is as follows: 31 at home, 11 in hospital and 1 dead.

### Anesthesiology, New York

10:1-124 (Jan.) 1949

Study of Physical Methods for Determination of Tension of Ether Vapor in Air-Ether Mixtures. A. Faulconer Jr.—p. 1.

Intravenous Demerol-Scopolamine Amnesia During Labor. J. M. Brown, P. P. Volpitto and R. Torpin.—p. 15.

Study of Pentothal Sodium Anesthesia and Critical Investigation of Use of Succinate as an Antidote. J. H. Tucci, Mary A. B. Brazier, H. H. W. Miles and J. E. Finesinger.—p. 25.

Effect of Vasoconstrictors on Duration of Spinal Anesthesia: Controlled Study in Man. K. E. Bray, S. Katz and J. Adriani.—p. 40.

Studies on Diffusion Respiration. IV. Oxygen and Carbon Dioxide Content and Hydrogen Ion Concentration of Arterial and Venous Abdominal Blood of Dogs During Diffusion Respiration. R. W. Whitehead, J. N. Spencer, T. M. Parry and W. B. Draper.—p. 54.

*Myanesin as Muscle Relaxant. H. R. Griffith, C. R. Stephen, W. G. Cullen and W. Bourne.—p. 61.

Development of Hypospray for Parenteral Therapy by Jet Injection. R. A. Hingson.—p. 66.

*Suprascapular Nerve Block: Evaluation in Therapy of Shoulder Pain. J. Milowsky and E. A. Rovenstine.—p. 76.

Anesthesia for Neurosurgery. L. L. Teplinsky, Z. Harris, W. H. Cassels and O. Sugar.—p. 82.

Continuous Lumbar Sympathetic Block. J. E. Ruben and Patricia-Mary Kamsler.—p. 92.

Statistical Analysis of Anesthesia at Cleveland Clinic. G. W. Curry and D. E. Hale.—p. 101.

**Myanesin® as a Muscle Relaxant.**—Griffith and his associates discuss the muscle-relaxing properties of myanesin® (3-ortho-toloxy-1,2-propanediol). They conclude that the drug is fairly effective when administered in the recommended dosage, but that occasional local irritation at the site of injection and the occurrence of hemoglobinuria make its continued clinical use inadvisable. It has no advantage over curare in anesthesia.

**Suprascapular Nerve Block in Shoulder Pain.**—Rovenstine in 1941 introduced with Wertheim the technic of blocking the suprascapular nerve at the lesser scapular notch. The desirability of establishing the block at this point was its accessibility and the fact that no branches from this nerve are given off to the shoulder before it passes through the lesser scapular notch. Suprascapular nerve block was advocated as an adjunct in the treatment of chronic shoulder pain. Milowsky and Rovenstine report on 100 consecutive, unselected patients with shoulder pain; the greatest number was admitted with the diagnosis of bursitis. A good result was obtained in both the acute and chronic variety in the majority of patients following one block. Three patients with bursitis were not benefited by the suprascapular block. The mode of action of this treatment is not completely understood, but vasodilation might play a part. This would encourage vascularization and facilitate absorption of calcium deposits. Several patients have demonstrated in a follow-up examination roentgenologic evidence of loss of calcium. A second possibility is that relief of pain permits motion which, in turn, improves vascularization. The effects of suprascapular nerve block on pain of osteoarthritic origin were not uniformly successful. Patients with "idiopathic shoulder pain" experienced alleviation of symptoms following suprascapular nerve block. Supraspinatus and capsular tears may be effectively treated by nerve block if the injury is not complete or massive.

### Annals of Allergy, Minneapolis

7:1-154 (Jan.-Feb.) 1949

Immunologic Studies with Serums from Penicillin-Allergic Patients. M. S. Mallen and O. Cuellar.—p. 1.

Sensitivity Reactions from Penicillin Preparations of Prolonged Action. E. A. Haunz and E. L. Grinnell.—p. 4.

Review of Chemical Approach to Allergens. H. S. Bernton.—p. 13.

Repeated Patch Testing in Allergic Eczematous Sensitization. V. H. Witten and H. M. Shair.—p. 32.

Histamine-Sympathin Balance. F. J. Farrerons-Co.—p. 46.

Approach to Problem of "Epinephrine Fastness." F. F. Yonkman and F. L. Mohr.—p. 60.

*House Ivy Dermatitis: Treatment by Alcoholic Extract of House Ivy Leaves. S. E. Rynes.—p. 62.

Use of Cevitamic Acid in Symptomatic and Coseasonal Treatment of Pollinosis. E. A. Brown and S. L. Ruskin.—p. 65.

Correlation of Experimental Data with Clinical Behavior of Synthetic Antihistaminic Drugs. A. S. Friedlaender and S. Friedlaender.—p. 83.

Whale Oil, Trichophytin and Autoserotherapy in Treatment of Epidermophytosis. P. A. Sperber.—p. 91.

Nasal Pyribenzamine for Relief of Hay Fever. M. Zeller.—p. 103.

Periarteritis Nodosa. J. F. Harris and C. L. Laws.—p. 105.

Separation by Means of Ammonium Salts of Antibody-Antigen Reaction from Response of Smooth Muscle. A. J. Weil and E. Rose.—p. 108.

Evaluation of Therapeutic Substances Employed for Relief of Bronchospasm: III. Anticholinergic Agents. J. F. Beakey, E. Bresnick, L. Levinson and M. S. Segal.—p. 113.

**House Ivy Dermatitis.**—Rynes points out that house ivy has been cited in rare instances as a cause of dermatitis. A patient, aged 51, had a summer rash for seven or eight years. The attacks occurred in bouts, lasting three or four days with several exacerbations during the summer months. On one occasion, after having cut down some house ivy and trampled it into a basket, he had an extensive dermatitis of the hands and feet, which necessitated confinement to bed for several days. The diagnosis of dermatitis venenata due to house ivy was suspected and confirmed by patch test. Leaves were desiccated and broken up, and 10 Gm. were immersed in 100 cc. of absolute alcohol for twenty-four hours and then filtered through dry paper. A patch test with the undiluted extract was strongly positive. Prophylactic treatment was begun in May with 0.25 cc. of a 1 : 1,000 dilution of the alcoholic extract. The amount of extract required was drawn into a dry tuberculin syringe. To this was added sufficient buffered saline solution to make a volume of 0.3 to 0.4 cc., and the syringe was rapidly inverted two or three times. The active principle of the alcoholic extract was thrown out of solution into a finely divided suspension. This suspension was immediately injected deeply into the subcutaneous tissue of the arm. The prophylactic injections were continued at intervals of four to seven days until a level of 0.2 cc. of a 1 : 10 dilution was reached in five weeks. The maximum dose was repeated in July and again in August. The patient remained free of his usual summer rash. The author feels that a similar approach can be employed in other cases of dermatitis venenata in which a plant sensitivity is suspected. A preliminary patch test should be made with a leaf of the suspected plant, and if this proves positive, an alcoholic extract can be prepared within twenty-four to forty-eight hours.

## Archives of Dermatology and Syphilology, Chicago

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Tribute to Dr. George Miller MacKee from His Pupils, Associates and Friends of New York Skin and Cancer Unit. M. B. Sulzberger.—p. 97.
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Contact Roentgen Therapy. G. C. Andrews.—p. 118.
Lupus Erythematosus Telangiectodes. P. E. Bechet.—p. 128.
Hypersensitivity of Sulfapyridine: Report of Case. H. Bellach.—p. 134.
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Para-Aminobenzoic Acid and Indole Metabolism. H. Sharlit.—p. 191.
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Leukoderma Produced by Antioxidants: Report of Cases. G. A. Spencer.—p. 215.
Vioform in Dermatologic Therapy with Particular Reference to Its Use in Different Vehicles. M. B. Sulzberger and R. L. Baer.—p. 224.
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Psoriasis of Hypopharynx. F. G. Zak and F. Cisneros.—p. 241.

## Archives of Internal Medicine, Chicago

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North American Blastomycosis (Gilchrist's Disease): I. Study of Disease from Review of Literature. R. A. Starrs and M. O. Klotz.—p. 1.
Id.: II. Analysis of Canadian Reports and Description of New Case of Systemic Type. R. A. Starrs and M. O. Klotz.—p. 29.
*Comparative Time Action of Globin Insulins. J. H. Rohr and A. R. Colwell.—p. 54.
Cardiac Amyloidosis: Electrocardiographic and Pathologic Observations. S. Wessler and A. S. Freedberg.—p. 63.
*Myenteric Plexus in Congenital Megacolon: Study of 11 Cases. F. R. Whitehouse and J. W. Kernohan.—p. 75.

**Comparative Time Action of Globin Insulins.**—Rohr and Colwell studied the time action of standard globin insulin and compared it with ordinary insulin and with protamine zinc insulin. Comparisons were made by obtaining many blood sugar curves and urinary sugar curves showing the action of single doses of the same size in well stabilized patients with diabetes mellitus. The possibility of altering the characteristic time action of globin insulin by varying its globin content was also investigated by the same method of comparison. In diabetes mellitus of moderate severity, the following characteristics of 60 unit doses of various globin insulin mixtures in comparison with other insulin preparations were demonstrated. Standard globin insulin has a time action which is fairly rapid, showing initial effect within four hours. Its maximum effect is apparent in the concentration of blood sugar in eight to sixteen hours and in that of urine sugar in eight to twenty hours. This effect persists into the second day after the injection is made. Its action is intermediate between that of ordinary insulin in solution and that of protamine zinc insulin. A mixture of equal parts of regular insulin and standard globin insulin has an accelerated and shortened action. It is intermediate between its two components in this respect. Increasing the globin content of standard globin insulin from 3.8 to 38.0 mg. per hundred units of insulin does not appreciably alter its time action. Although these investigations were made chiefly from a pharmacologic point of view, certain therapeutic applications became obvious. In situations characterized by postprandial glycosuria or nocturnal hypoglycemia or both, when protamine zinc insulin is used in large dosage, globin insulin is certainly indicated. Whether it will give as good control in such situations as protamine zinc insulin mixtures will be decided by the method of trial and error. In daily morning injections, it will give a more intense daytime insulin effect and wear off more rapidly than protamine zinc insulin but still permit some degree of overlapping from day to day in doses of 60 units. Acid or clear globin zinc insulin cannot be modified by addition of more globin for the purpose of prolonging its activity or making it less intense. If such modification is desired, suitable mixtures of insulin and protamine zinc insulin should be used. If increased promptness of action is desired, globin insulin can be supplemented by admixture with ordinary insulin in proportions up to about equal parts. Such mixtures might be useful for patients who tend to show nocturnal hypoglycemia and glycosuria after meals on globin insulin.

**Myenteric Plexus in Congenital Megacolon.**—Whitehouse and Kernohan feel that one approach to the study of the origin and pathogenesis of congenital megacolon would be the study of the myenteric plexus (plexus of Auerbach) of the colon in cases of congenital megacolon in which postmortem examination had been performed. The myenteric plexus apparently has as its main function in the colon the conduction of stimuli and the coordination of movements and, as a result of such function, would be of importance in the pathogenesis of congenital megacolon. They studied the myenteric plexus in 11 cases of congenital megacolon, a series of cases used as controls and 5 cases of secondary megacolon. The myenteric plexus was found to be absent in the most distal part of the colon in all cases of congenital megacolon. In 80 per cent of the cases it was absent also in the "transitional region." In 60 per cent of the cases it was in addition absent in the lower part of the sigmoid. In 20 per cent of the cases the absence of the myenteric plexus extended from the rectum into the upper part of the sigmoid and the descending colon. In all cases of congenital megacolon there were nerves present in the location of the myenteric plexus which were not seen in the control cases. The authors conclude that the strategic location of the changes and a review of previous theoretic concepts, experimental studies and certain physiologic and anatomic studies point toward the significance of processes in the myenteric plexus in the pathogenesis of congenital megacolon.

## Archives of Neurology and Psychiatry, Chicago

60:107-220 (Aug.) 1948

*Classification of Epilepsies. W. Penfield.—p. 107.
Relation of "Thinking" and Language: Experimental Approach, Using Dysphasic Patients. R. Meyers.—p. 119.
Activation of Human Nerves by Ischemia: Trousseau's Phenomenon in Tetany. E. Kugelberg.—p. 140.
Activation of Human Nerves by Hyperventilation and Hypocalcemia: Neurologic Mechanism of Symptoms of Irritation in Tetany. E. Kugelberg.—p. 153.
*Cerebral Vascular Lesions: Electroencephalographic and Neuropathologic Correlations. R. Cohn, G. N. Raines, D. W. Mulder and Meta A. Neumann.—p. 165.
Hemorrhagic Lesions in Central Nervous System in Acute Poliomyelitis. M. Lev, S. J. Ruden and W. J. Reals.—p. 182.

**Classification of Epilepsies.**—Penfield stresses the great practical importance of proper classification. Patients with epileptic seizures may be grouped under cerebral seizures, focal cerebral seizures and idiopathic epilepsy. In the group of cerebral seizures, the pattern of attack may not be clear, but the exciting cause must be sought. In the second group, the initial pattern of attack is clear and the localization of discharge is evident, but it becomes necessary to discover the nature of the focal abnormality or the precipitating cause. Causes of cerebral seizures or of focal cerebral seizures include birth injury, cerebral abscess, trauma or tumor, congenital defect, disseminated sclerosis, hypoglycemia, infection, vascular disease, encephalopathy or toxemia. In the third group, the electroencephalogram is usually typical, being characterized by 3 per second, bilaterally synchronous waves. Most of these patients will be found to have "petit mal" lapses of consciousness; some will admit the occurrence of epilepsy elsewhere in the family, and all must be considered possible carriers of the tendency. When a patient is first seen, the pattern of the seizure may not be clear. Further study may reveal that his minor seizures consist in a tingling sensation in the left hand and that the *major* seizures begin with such a sensation. Thereupon, the patient is reclassified under the heading of focal cerebral seizures, somatosensory, cause unknown. Later, it may be obvious that he has an atrophic cerebral lesion, which seems to date from birth, and the diagnosis becomes "focal cerebral seizures, somatosensory; cause, birth injury." On the other hand, it may not be possible to work out the pattern of seizures, and yet the cause may be evident. In this event, the diagnosis would remain cerebral seizures, caused, for example, by cerebral vascular disease or by hypoglycemia. The author further discusses a classification based on age of onset. In every adult whose convulsive seizures begin after the age of 20 the epileptic state should be considered symptomatic of some other condition, such as trauma, neoplasm, arteriosclerosis, hypoglycemia or intoxication. Such a patient should be thoroughly studied. The author discusses roentgenographic, pneumoencephalographic and electroencephalographic studies and describes seizure patterns. When there is doubt as to the type of epileptic seizure or its localization, it may be wise to reproduce the patient's seizure by hyperpnea, continued for about ten minutes, or by requesting the patient to drink large amounts of water and administering pitressin® (beta-hypophamine) simultaneously. With regard to treatment the author says that for adults who have no obvious lesion of the brain, diphenylhydantoin and other recently recommended drugs may be best, but for patients who have an objective cerebral lesion, phenobarbital is more effective. The author recommends to all who are subject to seizures the following tetrad of personal precautions: (1) avoidance of alcohol, (2) avoidance of constipation, (3) avoidance of overfatigue from lack of sleep and (4) decrease of fluid intake to a minimum consistent with comfort. Attacks which can be controlled by medication and by observation of precautions should not be treated by surgical means, but when the focal nature of the attacks is established, and when the roentgenograms, pneumoencephalograms or electroencephalograms suggest the presence of a gross cortical lesion, then surgical treatment should be considered.

**Cerebral Vascular Lesions.**—This presentation by Cohn and his co-workers is the result of the compilation of data obtained from 130 patients showing disturbances of clinical and electrical function of the brain resulting from lesions of the cerebral vessels. Eighteen patients showed clinical evidence of subarachnoid hemorrhage. Eight patients had proved to have chronic subdural hematomas; 6 of these had preoperative recordings. The other 104 patients showed clinical signs of thrombosis, embolism or hemorrhage involving the cerebral vessels, with subsequent parenchymatous damage. Of these 104 patients, 12 died, and the brains of 11 of these patients were subjected to a detailed gross and microscopic examination. Each patient in this series was the recipient of one to several electroencephalographic examinations. All recordings were made with a Grass six channel electroencephalograph. Illustrative case histories and electroencephalographic tracings are presented. The authors arrive at the following conclusions: 1. Subarachnoid hemorrhage primarily induces minimal or moderate generalized abnormal electroencephalographic changes. Occasionally focal decreased electric output is also observed. 2. Subdural hemorrhage, in the main, acts as an intracranial space-consuming lesion. 3. Relatively superficial lesions (thromboses or hemorrhages) give rise to prominent focal slow wave activity. 4. Deep subcortical lesions give rise to little focal or general low frequency activity. 5. Patients with arterial hypertension show progressive electroencephalographic changes with continuing chronicity.

### Archives of Ophthalmology, Chicago

**40**:371-482 (Oct.) 1948

Blindspot Syndrome. K. C. Swan.—*p. 371.*

Use of Roentgen Therapy for Retinal Diseases Characterized by New-Formed Blood Vessels (Eales's Disease; Retinitis Proliferans). Preliminary Report. J. S. Guyton and A. B. Reese.—p. 389.

Studies in Experimental Ocular Tuberculosis: XII. Effect of Streptomycin and "Promizole" on Experimental Ocular Tuberculosis in Immune-Allergic Rabbit. A. C. Woods and R. M. Wood.—p. 413.

Retinal Tumor Associated with Neurofibromatosis (Von Recklinghausen's Disease): Report of Case. F. J. Bloch.—*p. 433.*

Vision in Strabismus: Preliminary Report. F. Costenbader, Dorothy Bair and Alice McPhail.—p. 438.

*Conical Cornea and Mongolism. A. Rados.—p. 454.

**Conical Cornea and Mongolism.**—Rados treated 2 patients, a man aged 22 and a woman aged 29, in whom bilateral conical cornea was associated with mongolism. The literature mentions as ocular symptoms of mongolism only nystagmus, convergent strabismus and blepharitis in some cases, in addition to the almost constant presence of the oblique palpebral fissure, with slanting of the lids up and temporalward and the epicanthus. Textbooks do not mention the concurrence of conical cornea with mongolism, but the author says that while the association of the two conditions was mentioned only occasionally in older reports, the accumulation of cases now indicates that the concurrence is not due alone to chance but belongs, like the cataract of old persons with mongolism, to the facultative characteristics of mongolian imbecility. The occurrence must, of necessity, be infrequent, since conical cornea is rare in young persons. It usually develops at about the age of puberty or shortly after; the majority of children with mongolism do not reach the age of puberty. The association of conical cornea with mongolism raises questions. In both conditions an endocrine disturbance, possibly polyglandular, may be operative, either primary or as a result of a general developmental abnormality in the germ plasm. The occurrence of conical cornea in cases of mongolism permits the conclusion that the nonhereditable form of keratoconus must be associated with endocrine imbalance characteristic of mongolism and that in the complex transmission of the anomaly the genetic factors may influence the cornea directly or through a possible inherited dysfunction of the endocrine glands.

### Archives of Surgery, Chicago

**57**:1-184 (July) 1948

*Physiologic Studies on Stomach of Woman with Gastric Fistula. R. J. Crider and S. M. Walker.—p. 1.

Effect of Intravenously Administered Amino Acids on Stomach of Woman with Gastric Fistula. R. J. Crider and S. M. Walker.—p. 10.

*Complete Stricture of Extrahepatic Bile Ducts: External Hepaticostomy Followed by Spontaneous Hepatoduodenal Fistula. W. Walters and C. P. Marvin.—p. 18.

Chemical Studies on Experimental Hepatic Congestion in Dog. D. Kershner, T. C. Hooton and Wilhelmina G. Feinberg.—*p. 24.*

Relaxation of Gastric Mucosa Producing Pyloric Obstruction. A. Zacho.—p. 45.

*Chronic Pancreatitis Causing Complete and Incomplete Obstruction of Common Bile Duct. M. Behrend and A. Behrend.—p. 51.

Leiomyosarcoma of Stomach: Review of 16 Cases and Report of Case of Multiple Leiomyosarcomas of Stomach. C. P. Marvin and W. Walters.—*p. 62.*

Surgical Problem of Periampullary Cancer. G. T. Pack and R. J. Booher.—*p. 71.*

Effect of Exclusive Parenteral Feeding on Closure of Pancreatic Fistula: Study Made After Duodenopancreatic Resection for Carcinoma of Ampulla of Vater. P. O. Thomas and C. A. Ross.—p. 104.

Phosphatase Activity in Blood Serum, Bone and Soft Tissues Following Fracture in Cat. E. M. George.—p. 113.

Solitary (Unicameral) Bone Cyst. A. G. James, B. L. Coley and N. L. Higinbotham.—p. 137.

Mixed Tumor of Bridge of Nose. J. Rabinovitch, D. Grayzel and S. Achs.—p. 148.

Dermoid Cysts and Teratomas of Mediastinum with Unusual Features. H. C. Maier.—p. 154.

Arthrodesis of Tarsal Bones: Study of Failure of Fusions. Z. B. Friedenberg.—p. 162.

Trigeminal Tractotomy: Observations on 48 Cases. W. B. Hamby, B. M. Shinners and Ina A. Marsh.—p. 171.

**Studies on Stomach of Woman with Gastric Fistula.**—Crider and Walker point out that the circumstances which permit direct observation of the interior of the human stomach are rare, only 4 such cases having been described up to now. The possibility that physiologic activity in the stomach of the female may differ from that observed in the male is suggested by the strikingly greater incidence of duodenal and gastric ulcer (a 4 to 1 ratio) reported for males. The authors took advantage of the opportunity to study the interior of the stomach of a young woman who had undergone gastrostomy. Recordings were obtained of the motility of the antral region. The secretion of the stomach was allowed to flow out of the fistula by gravity and was collected in a glass beaker. The gastric juice was analyzed for combined and free hydrochloric acid, pepsin and bile; the general character of the secretion was noted, and subjective sensations such as hunger pangs and heartburn were recorded. The color of the mucosa was observed. A cyclic motility was observed. The interval between cycles and the magnitude of contractions varied considerably. Two types of contraction were seen, i.e., a basic kneading type and a peristaltic type. A cyclic type of motility at the cardiac sphincter was noted. Under standard conditions, with the patient fasting and in a happy and cooperative mood, a moderately active, secreting stomach with a relatively red mucosa was observed.

Anger, resentment, fear and anxiety were associated with decreased motility and secretion of the stomach and with blanching of the mucosa. It was also noted that the secretion had a lower hydrochloric acid content. Heartburn, nausea, retching and a reflex of bile-stained secretion were caused by mechanical stimulation in the region of the cardiac sphincter. Menstruation did not have any appreciable effect on the behavior of the stomach. Periods of sleep appeared to have little effect. Painful stimuli caused a pronounced increase in the motility of the stomach but had little effect on the secretion or on the color gradient. The absence of hypersecretion and hypermotility under conditions of sustained emotional tension in this patient was in striking contrast to their presence in male patients previously studied.

**Stricture of Bile Ducts: External Hepaticostomy Followed by Spontaneous Hepatoduodenal Fistula.**—Walters and Marvin of the Mayo Clinic report 6 cases of complete stricture of the extrahepatic bile ducts in which external hepaticostomy was followed by the spontaneous development of a hepatoduodenal fistula. In 5 of these cases no effort was made to create an anatomic condition which would favor the development of such a fistula. A rubber catheter was sutured into the intrahepatic duct to create an external biliary fistula in the first 2 cases. It was the intention of the surgeon to transplant the fistulous tract into the intestine at a later date, but a fistula developed between the bile duct and the intestine in the interim. Owing to the gratifying result obtained in these cases, Walters decided to use a similar surgical procedure in the next case of complete stricture of the extrahepatic bile ducts in which an anastomosis could not be effected between a patent bile duct and the intestine. A slight modification of the technic was employed in case 6. In this case the duodenum was brought up and sutured to the under side of the liver. The sutures were tied tightly. It was hoped that this would produce necrosis which would favor the development of a hepatoduodenal fistula. It was expected that this modification might assist in the development of a fistula into the duodenum, which it did. Unfortunately the fistula closed after the removal of a catheter from the sinus tract. In 5 of the 6 cases the patients have had few, if any, symptoms of biliary obstruction for periods ranging from six months to eight years after the operation.

**Pancreatitis Causing Obstruction of Bile Duct.**—After commenting on the rarity of chronic pancreatitis and on the difficulty of differentiating it from carcinoma of the pancreas, the Behrends review the literature on the condition and discuss etiologic factors, the symptomatology, the diagnosis and treatment, and present histories of 10 cases. Only 1 of the 10 patients reported had stones in the gallbladder. This is characteristic, stones in the biliary tract being exceptional in the presence of chronic pancreatitis. All except 2 of the patients had jaundice. The first patient treated by the authors was subjected to choledochostomy, with T tube drainage. Five underwent cholecystoduodenostomy. In 1 case a choledochoduodenostomy was performed, and in another cholecystojejunostomy was followed by choledochogastrostomy. In all cases the pancreas was hard, and it was most difficult to differentiate between chronic pancreatitis and carcinoma. If patients operated on live over five years, this fact can be taken as reasonable evidence that cancer of the pancreas or of the papilla of Vater was not present. All but 1 of these patients lived for five years or more in good health. The authors stress the following points: 1. Chronic pancreatitis may cause complete or incomplete obstruction of the common bile duct. 2. The cause is still undetermined. 3. There may be some connection between congenital fibrocystic disease of the pancreas and chronic pancreatitis. 4. The symptoms are not always suggestive of pancreatic disease, but may simulate those of cholelithiasis or those of carcinoma of the head of the pancreas. 5. Jaundice may or may not be present in chronic pancreatitis. 6. The diagnosis of chronic pancreatitis is difficult to establish, even after the abdomen has been opened. 7. It is necessary to differentiate between chronic pancreatitis and carcinoma of the head of the pancreas. 8. When there is doubt, a biopsy should always be made; an internal anastomosis is preferred to the use of the T tube after a choledochostomy.

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Hereditary Myoclonus Epilepsy: 2 Cases with Pathologic Findings. W. I. Morse 2nd.—p. 116.

Observations on Clearance Method of Determining Renal Plasma Flow with Diodrast, Para-Aminohippuric Acid and Para-Acetyl-Aminohippuric Acid. E. Newman, A. Kattus, A. Genecin and others.—p. 135.

Unusual Case of Squamo-Basal Cell Carcinoma. T. P. B. Payne.—p. 169.

Gaucher's Disease with Thrombocytopenia, Instance of Selective Hypersplenism. F. W. Davis, A. Genecin and W. E. Smith.—p. 176.

## Bulletin New York Academy of Medicine, New York

### **25**:65-132 (Feb.) 1949

Thoughts on Medical History and Libraries—1847 and 1947. S. V. Larkey.—p. 65.

Advances in Our Knowledge Concerning Etiology and Treatment of Hematologic Disorders. C. C. Sturgis.—p. 84.

Critique of Present Status of Psychotherapies. R. P. Knight.—p. 100.

Safeguards in Use of New Drugs. A. Smith.—p. 115.

Medicine Under Hitler. G. Rosen.—p. 125.

## California Medicine, San Francisco

### **70**:87-156 (Feb.) 1949

Hodgkin's Disease: Clinical-Pathologic Review of 150 Cases. W. L. Bostick.—p. 87.

Palliative Treatment of Prostatism. R. W. Barnes and Claire E. Heitman.—p. 93.

Unilateral Paralysis of Eye Muscles Associated with Intracranial Saccular Aneurysms. E. Boldrey and E. R. Miller.—p. 96.

Adoption Procedures in California: What Physicians Should Know About Them. J. V. Campbell.—p. 99.

Significance of Some Mental Disturbances During Convalescence from Surgical Operations. J. G. Rushton.—p. 101.

Surgical Treatment of Myasthenia Gravis. W. H. Snyder Jr.—p. 104.

Superficial Epithelioma of Covered Parts of Body. W. B. F. Harding.—p. 108.

The Obstetrician's Responsibility in Infant-Mortality. T. F. Bell.—p. 114.

Persistent Self-Mutilation Following Surgical Procedures. P. A. Gliebe and L. Goldman.—p. 117.

Simplified Method of Making Color Photographs of Oral Lesions. F. A. Sooy.—p. 121.

Roentgen Therapy of Rheumatoid Spondylitis. N. M. Spishakoff and B. V. A. Low-Beer.—p. 124.

## Canadian J. of Research. Medical Sciences, Ottawa

### **26**:295-372 (Dec.) 1948. Partial Index

Studies on Amebiasis in Canada. Part II. Method for Obtaining Viable Cysts of Entamoeba Histolytica Free from Bacteria. M. J. Miller and W. R. Firlotte.—p. 299.

Some Effects of Administration of Thorium Nitrate to Mice. S. J. Patrick.—p. 303.

"Drop Plate" Method of Counting Viable Bacteria. R. W. Reed and G. B. Reed.—p. 317.

Comparison of "Drop" and "Pour" Plate Counts of Bacteria in Raw Milk. J. J. R. Campbell and J. Konowalchuk.—p. 327.

*Surface Growth of Bacteria on Cellophane. G. B. Reed and D. G. McKercher.—p. 330.

Methods for Determination of Distribution of Radioactive Phosphorus Among Phosphorus-Containing Constituents of Tissues. J. A. McCarter and Ethel L. Steljes.—p. 333.

*Assessment of Hospital Diets. G. Hunter, J. Kastelic and M. Ball.—p. 347.

Assessment of Diets: Analysis Versus Computation from Food Tables. G. Hunter, J. Kastelic and M. Ball.—p. 367.

**Growth of Bacteria on Cellophane.**—Reed and McKercher describe a method for the cultivation of bacteria on the surface of sheets of cellophane spread over layers of absorbent material such as cotton saturated with any fluid medium. The method has proved to be useful in preparing suspensions of bacteria reasonably free from contamination by the culture medium.

**Assessment of Hospital Diets.**—Hunter and his associates undertook an investigation to ascertain the nutritional adequacy of twelve hospital diets. All diets were collected at the Edmonton Hospital by a trained dietitian and assayed in the laboratory for vitamin A and carotene, thiamine, riboflavin, nicotinic acid, ascorbic acid, calcium, phosphorus, iron and protein. The diets were found to be deficient in various respects, and particularly in the B vitamins, ascorbic acid and iron. There is no scientific evidence to support the belief that large amounts of vitamins hasten healing and regenerative processes except where there has been previous deficiency. The average convalescent patient therefore needs no more than the ordinary sedentary person. The authors feel that, as proper nutrition is a fundamental basis of health and patients are in a hospital to regain health, the general adequacy of a hospital diet should not be open to question. Where there is faulty nutrition in the local population, the hospital meals should be designed to counteract such conditions rather than perpetuate and even exacerbate them.

## Endocrinology, Springfield, Ill.

**44:**109-210 (Feb.) 1949. Partial Index

Technic of Organ Culture for Protracted Metabolism Studies. N. T. Werthessen.—p. 109.
Relationship of Temperature and Insulin Dosage to Rise in Plasma Amino Nitrogen in Eviscerated Rat. Jane A. Russell and Marjorie Cappiello.—p. 127.
Interval Between Normal Release of Ovulating Hormone and Ovulation in Domestic Hen. I. Rothchild and R. M. Fraps.—p. 134.
Influence of Growth Hormone on Fasting Metabolism. Clara M. Szego and A. White.—p. 150.
Early Effects of Testosterone Propionate of Seminal Vesicles of Castrated Rats. G. G. Rudolph and L. T. Samuels.—p. 190.

## Gastroenterology, Baltimore

**12:**1-176 (Jan.) 1949

Roentgen Examination of Defunctioned Colon After Ileostomy, with Special Reference to Safety and Practical Value of Thorium Dioxide as Contrast Medium. H. J. Shull, M. D. Schulz and C. M. Jones. —p. 1.
Diverticula of Stomach: Report of Thirty Cases and Review of Literature. C. H. Brown, R. P. Bissonnette and R. D. Albee.—p. 10.
*Chronic Recurrent Pancreatitis. I. Clinical and Laboratory Aspects. R. O. Muether and W. A. Knight Jr.—p. 24.
*Id. II. Serial Serum Diastase Levels Following Prostigmine Stimulation. W. A. Knight Jr., R. O. Muether and Anne J. Sommer.—p. 34.
Effect of Vomiting Due to Intestinal Obstruction on Serum Potassium S. Bellet, C. S. Nadler, P. C. Gazes and Mary Lanning.—p. 49.
Effect of Syntropan on Motor Activities of Human Gastrointestinal Tract and Gastric Acidity. S. H. Lorber and T. E. Machella.—p. 57.
Abdominal Palpation as Aid to Gastroscopic Examination. O. A. Blomquist.—p. 70.
Observations on Clinical Course of Non-Specific Ulcerative Colitis. Z. Maratka and M. A. Spellberg.—p. 79.
*Gamma Globulin in Treatment of Chronic Phase of Epidemic Infectious Hepatitis. W. Volwiler and J. B. Dealy Jr.—p. 87.
Validity of Laboratory Evidence in Diagnosis of Sequelae of Acute Hepatitis. H. J. Tumen and E. M. Cohn.—p. 92.
Relation of Diet to Diverticulosis of Colon in Rats. A. J. Carlson and F. Hoelzel.—p. 108.
Effect of Experimental Devascularization on Gastric Mucosa. B. Holm, S. Boyarsky and T. G. Morrione.—p. 116.
Results in Treatment of 374 Mann-Williamson Dogs. H. C. Saltzstein, D. J. Sandweiss, E. J. Hill and J. Hammer.—p. 122.
Effect of Secretin on Bile Formation in Man. M. I. Grossman, H. D. Janowitz, H. Ralston and K. S. Kim.—p. 133.

**Clinical and Laboratory Aspects of Chronic Recurrent Pancreatitis.**—Muether and Knight report 58 patients, 28 men and 30 women between the ages of 20 and 80, with chronic recurrent pancreatitis. The symptoms and physical findings during remissions were at best suggestive and never diagnostic. The persistence of abdominal pain, food intolerance and diarrhea, particularly when associated with exacerbations which subside on symptomatic treatment and when not associated with demonstrable disease in the gastrointestinal tract, liver or gallbladder, should suggest the presence of chronic pancreatitis. The serum diastase levels are diagnostically elevated during exacerbations and may remain elevated during remissions. Any reading above 200 units is definitely abnormal. Extremely low serum diastase level below 80 units may be seen in far advanced pancreatic disease. The glucose tolerance test, serum cholesterol and stool examination are of little aid in the diagnosis of chronic recurrent pancreatitis.

**Serum Diastase Levels in Chronic Recurrent Pancreatitis.**—Knight and his co-workers investigated the response of the serum diastase levels of 44 patients with chronic pancreatitis, of 22 patients with miscellaneous diseases in which it was believed that the pancreas was not involved and of 10 normal control persons to neostigmine methylsulfate. The serum diastase values were remarkably constant in normal controls and in patients without pancreatic disease after stimulation of the pancreas with neostigmine methylsulfate. When the pancreas was stimulated in patients with chronic pancreatitis, abnormal serial diastase values were obtained, depending on the degree and type of damage as follows: In group 1, consisting of 21 cases, the fasting diastase values were normal or elevated; after stimulation with neostigmine there was a progressive fall in the serial diastase values. This type of curve is indicative of pancreatic cellular disease without ductal or intrapancreatic obstruction. In group 2, consisting of 15 cases, the high or normal fasting diastase value showed a slight rise after stimulation followed by a progressive fall to values equal to or lower than the fasting level. This type of response indicates pancreatic cellular disease with an associated mild ductal obstruction. In group 3, consisting of 6 cases, the fasting values were normal or elevated. Stimulation with neostigmine was followed by a progressive rise of the serial serum diastase values. This response indicates pancreatic cellular inflammation with persistent intrapancreatic obstruction. The fourth type of response was seen in 2 patients in which the process was so far advanced that the gland no longer responded to stimulation, yielding a low flat curve. Seven cases of carcinoma of the pancreas were studied. In 5 of them a high fasting diastase value was obtained which was followed by a progressive increase in the serial diastase level. This type of response is seen in patients in whom there are present pancreatic cells capable of secreting enzyme with complete obstruction to the flow of these pancreatic enzymes into the gastrointestinal tract. In the 2 remaining cases there were abnormally low fasting diastase values; on stimulation of the pancreas no change in the serial diastase values was observed, probably representing complete atrophy of the gland as a result of prolonged obstruction.

**Gamma Globulin in Epidemic Infectious Hepatitis.**—Volwiler and Dealy treated 2 Army officers, aged 29 and 23, who had chronic epidemic infectious hepatitis, with 200 cc. of normal human serum gamma globulin administered intramuscularly over a period of one month; 20 cc. was injected on alternate days for five doses; thereafter, 20 cc. was given twice weekly for another five doses. This schedule was planned so that a high titer of circulating antibody would be rapidly attained and subsequently maintained over a period of several weeks. This therapy did not alter the clinical pattern of the 2 patients. If the chronic phase of hepatitis is perpetuated by the periodic release of active virus from the disintegrating necrotic parenchymal cells, the therapeutic ineffectiveness of even long-maintained passive immunity of this kind is not surprising when one considers the histologic features of this phase of epidemic hepatitis. In spite of the characteristic persistence of periportal and focal intralobular inflammation, actual necrosis of parenchymal cells is infrequent, and when present probably proceeds at a very slow rate. If live virus is contained within parenchymal cells, it is probably beyond the reach of the circulating antibody.

## Iowa State Medical Society Journal, Des Moines

**39:**1-42 (Jan.) 1949

Quinidine Therapy. H. B. Burchell.—p. 1.
Mumps Encephalitis. P. D. Knott.—p. 3.
Diagnosis and Treatment of Blepharoconjunctivitis. J. H. Allen.—p. 5.
Use of Radium in Treatment of Nasopharyngeal Lymphoid Tissue. W. H. Tyler.—p. 8.
Care of Premature Infants in Small Hospital. Maryelda Rockwell. —p. 12.

**39:**43-90 (Feb.) 1949

*What Can the General Practitioner Do for the Nervous Patient? W. C. Alvarez.—p. 43.
Surgical Treatment of Gastric Lesions. C. J. Mikelson.—p. 50.
Etiology and Treatment of Uveitis. A. E. Braley.—p. 53.
Serous Otitis Media. R. C. Carpenter.—p. 57.
Possible New Therapy for Acrodynia. C. J. Baker.—p. 61.
Spinal Cord Tumor: Report of Case. M. J. Foster and W. M. Block. —p. 63.

**The Nervous Patient and the General Practitioner.**—Alvarez shows that although the family physician is frequently helped in making a diagnosis by knowing the patient and his background, the average physician does not think often enough of a neurosis. Physicians sometimes fail to recognize a neurosis among their own relatives. The author deplores that professors in medical schools are much too inclined to neglect the neuroses and to demonstrate in the amphitheater examples of only the most rare and bizarre organic diseases. The teacher should remember that his students will rarely, if ever, see or recognize one of these diseases. What they will see every day will be nervous men and women with negative reactions to tests and all sorts of distress everywhere: backaches, headaches, dysmenorrhea, flatulence, fatigue and lack of energy. One of the bad features of medical practice today is that physicians so often try to diagnose neurosis only by exclusion. A patient is put through all the tests, and if negative reports are obtained, a neurosis is diagnosed. The disadvantage of this procedure is that in tests slight abnormalities may be disclosed which have nothing to do with the illness, but which satisfy the examiner and lead him to conclude that the diagnosis is made; the real disturbance, however, goes on unrecognized and unrelieved. The author warns against trying to make a diagnosis from one test and against placebos of diagnosis such as low blood sugar, low blood calcium, floating kidney and the like. The way the history is told frequently differentiates the patient with organic lesions from the nervous patients in whom the disorder is functional. The author cites syndromes that are always functional in nature, giving particular attention to migrainous disorders, and to gastrointestinal distress not related to meals or defecation.

## Journal Industrial Hygiene & Toxicology, Baltimore

**31:**1-65 (Jan.) 1949

Toxic Properties of Xylidine and Monoethylaniline: I. Comparative Toxicity of Xylidine and Monomethylaniline when Administered Orally or Intravenously to Animals or Applied on Their Skin. J. F. Treon, W. B. Deichmann, H. E. Sigmon and others.—p. 1.

Toxicity and Potential Dangers of Cyclotrimethylenetrinitramine (RDX). W. F. von Oettingen, D. D. Donahue, H. Yagoda and others.—p. 21.

Experimental Studies on Action of Silica Gel Catalyst Administered to Guinea Pigs by Inhalation. C. U. Dernehl, C. A. Nau, T. M. Frand and H. W. Neidhardt.—p. 32.

Pneumoconiosis from Fuller's Earth: Report of Case with Autopsy Findings. H. O. Tonning.—p. 41.

Intervertebral Disk Injury: Analysis of 113 Industrial Cases. H. C. Marble and W. A. Bishop.—p. 46.

Maximum Allowable Concentrations of Atmospheric Impurities. P. Drinker and W. A. Cook.—p. 51.

Penetration of Air-Borne Particulates Through Human Nose. II. H. D. Landahl and T. Tracewell.—p. 55.

Range-Finding Toxicity Data, List III. H. F. Smyth Jr., C. P. Carpenter and Carrol S. Weil.—p. 60.

## Journal of Lab. and Clinical Medicine, St. Louis

**34:**151-296 (Feb.) 1949

*Hemophilia-Like Disease in Women: Report of 2 Cases. J. S. Hewlett and R. L. Haden.—p. 151.

Lymphocyte: Studies on Its Relationship to Immunologic Processes in Cat. C. G. Craddock Jr., W. N. Valentine and J. S. Lawrence. —p. 158.

Study of Cholinesterase Activity in Blood of Patients with Hematologic Disease. A. Sawitsky, M. Rowen and L. M. Meyer.—p. 178.

In Vitro Effects on Gram-Negative Bacteria of Streptomycin Combined with Penicillin and/or Sulfadiazine. E. J. Pulaski and H. J. Baker. —p. 186.

*I. Mumps Vaccine: Studies on Human Volunteers. H. H. Muntz, H. M. Powell and C. G. Culbertson.—p. 199.

Spontaneous and Induced Glomerulonephritis in Inbred Strain of Mice. A. Kirschbaum, E. T. Bell and J. Gordon.—p. 209.

Streptococcus Viridans Endarteritis of Arteriovenous Aneurysm: Cured by Penicillin and Surgical Excision. M. Statland and T. G. Orr. —p. 221.

Resistance of Recently Healed Excisional Ulcer of Stomach to Histamine-Induced Ulcer. E. H. Hale and M. I. Grossman.—p. 228.

Concentration of Free Valine, Tryptophane and Histidine of Plasma of Young and Old Individuals, Determined with Microbiologic Method. P. Ackermann, Lilli Hofstatter and W. B. Kountz.—p. 234.

Studies on Human Subjects Receiving Highly Agenized Food Materials. G. W. Newell, T. C. Erickson, W. E. Gilson and others.—p. 239.

Comparison of Bromsulfalein and Rose Bengal Tests. L. Monroe and J. Hopper Jr.—p. 246.

Observations on Histamine Content of Cerebrospinal Fluid in Man. I. J. Jackson and B. Rose.—p. 250.

Metabolism of Uric Acid, Glutathione and Nitrogen, and Excretion of "11-Oxysteroids" and 17-Ketosteroids During Induction of Diabetes in Man with Pituitary Adrenocorticotropic Hormone. J. W. Conn, L. H. Louis and Margaret W. Johnston.—p. 255.

Intentional Isoimmunizations Against Antigen D ($Rh_0$). R. K. Waller, —p. 270.

**Hemophilia-like Disease in Women.**—According to Hewlett and Haden, it has never been conclusively determined whether hemophilia can occur in women, although a few cases which clinically resemble hemophilia have been reported in women. The authors present the histories of 2 such women whom they observed in recent years. The clinical picture in these 2 cases was similar to that found in true hemophilia, and the outstanding characteristic was the prolonged coagulation time of the blood. The coagulation time of recalcified plasma, which Quick believes pathognomonic for hemophilia, was positive in both patients. When normal citrated plasma was added to blood from one of the patients the coagulation was greatly accelerated. This is similar to the response of hemophilic blood to normal plasma. Tiselius protein fractionation revealed definite abnormality in the alpha-globulins in one patient and suggestive but not conclusive evidence of such abnormality in the second patient. The authors believe that these changes are significant. The possibility that some acquired change in the plasma protein pattern might be the basis for the coagulation defect in these patients is suggested. The defect seems similar to that found in hemophilia.

**Mumps Vaccine in Volunteers.**—Muntz and his associates present data on the intracutaneous use of nonviable mumps vaccine on human volunteers, including medical students, nurses and patients at the Indiana University Medical Center. Two strains of virus were used, but no difference was found between the two strains. The strains were propagated on chick embryos. Vaccine was prepared from the heat-killed virus. Two complement-fixing units (0.1 cc. of vaccine) were injected intradermally. Hypersensitive reactions seemed to indicate previous contact with the virus in the subclinical or clinical forms. In addition, the same hypersensitivity developed after the first intradermal dose. The mumps vaccine given the volunteers served as an index of potential susceptibility to mumps, and a positive reaction implied a previous clinical or subclinical infection with the virus. The skin test dose caused significant rises in complement-fixing antibody titers and might possibly be a practical method of vaccination. Work is in progress to determine the optimal dose and route of administration. The vaccine caused no untoward reaction on 400 human subjects. There is as yet no evidence that the immunity which the intradermal vaccine produces will be permanent. Follow-up studies of the volunteers will be necessary. The potential value of the mumps vaccine has, in part, been determined. The actual value of mumps vaccine remains as an unsolved problem. Long term immunologic-epidemiologic studies will be necessary.

## Military Surgeon, Washington, D. C.

**104:**79-162 (Feb.) 1949. **Partial Index**

*Debridement: Obsolescent Stop Gap, or Essential Treatment. R. B. Pomerantz.—p. 79.

Method of Spinal Fusion by Arthrodesis and Iliac Bone Grafts. A. A. Michele and T. C. Harper.—p. 90.

Epidemiology of Primary Atypical Pneumonia: Analysis of Six Months Experience at Fort Lewis, Washington. R. A. Radke.—p. 113.

Doctor-Patient Relationship. D. M. Banen.—p. 124.

Hernioplasty by Means of Tantalum Mesh. H. C. W. S. de Brun. —p. 128.

Clinical Contribution of Veterans Administration Out-Patient Department to Teaching Program of Naval Hospital in Medical Center. J. Barrow, C. M. Herbert and C. C. Shaw.—p. 132.

*Psychosis Following "Amateur Hypnosis," Case Report. I. S. Dribben. —p. 136.

Irradiating Effect of Methyl Bis (B-Chloroethyl) Amine Hydrochloride. R. deR. Barondes and C. Lyons.—p. 138.

**Debridement: Obsolescent or Essential.**—Pomerantz gives a description of debridement as it was practiced in an evacuation hospital during the recent war. He stresses that debridement properly done prevents wound sepsis, anemia and general morbidity. The advent of biotherapeutic agents does not make debridement unnecessary. Clostridial cellulitis is amenable to large doses of penicillin, but the more advanced myositis is not. Cases are described in which local injection was of value in the treatment of clinical clostridial cellulitis. The author also describes debridement in the presence of jaundice and following phosphorus burns.

**Psychosis Following "Amateur Hypnosis."**—Dribben presents the case of a youth, aged 17, who had been recently inducted and who was brought to the hospital in a state of acute excitement, with complete detachment, incoherence, confusion and disorientation. A group of enlisted men had been attempting mesmeric hypnosis for amusement, and one of them had succeeded in hypnotizing the patient but had been unable to "bring him back." After a short period in the receiving office, the patient became less excited, and contact was restored, but he remained amnesic in respect to his own identity and to the incidents immediately prior to his hypnosis. The following morning there was a recurrence of the amnesia and confusion. He was then taken by his "buddies" to another hypnotist, who attempted mesmerism with constructive suggestions. This produced a temporary improvement. The same night, when he was brought back to the hospital, he was lethargic, detached, disoriented, confused and amnesic, particularly in regard to the hypnosis episode. Auditory hallucinations were noted. The lethargy and a mild detachment persisted. He developed an insight into the psychotic episode, and believed that it was caused by the hypnosis. Later he was separated from military service. This youth, who was constitutionally handicapped and had a schizoid diasthesis, reacted with psychosis to hypnosis by unqualified "amateur" mesmerists.

## New England Journal of Medicine, Boston

### **240**:241-276 (Feb. 17) 1949

Aureomycin in Treatment of Primary Atypical Pneumonia. M. Finland, H. S. Collins and E. B. Wells.—p. 241.

Ovarian Neoplasms in Hermaphrodite. T. F. Corriden.—p. 247.

*Right- or Left-Handedness: A Practical Problem. R. S. Eustis.—p. 249.

Epidermoid Carcinoma Primary in Bartholin's Gland. J. F. Curran Sr. and T. V. Healey.—p. 254.

Medical Hazards Associated with Fish Industry in Massachusetts. J. B. Skinner and C. C. Maloof.—p. 256.

Rubella (German Measles) and Congenital Deformities. C. Wesselhoeft. —p. 258.

Atrophy of Thyroid Gland, with Myxedema. Severe Arteriosclerosis of Aorta and Mesenteric Vessels.—p. 262.

Ethmoiditis and Sphenoiditis. Thrombophlebitis of Cavernous Sinuses and Tributary Cerebral Veins. Venous Cerebral Infarction.—p. 267.

**Right and Left Handedness.**—Eustis points out that the physician who is asked whether it is safe and wise to train an apparently left-handed child to use pencil and pen with his right hand can find good authority in the literature for almost any answer he may choose to give. Eustis believes that many apparently left-handed primary grade children may be successfully taught to write with the right hand. When writing begins they should all be so taught, because the use of the right hand fits in better with the left to right direction of writing and also because it conforms to the custom of the majority and hence is easier psychologically. If, however, a child objects strenuously or shows signs of nervous strain, of which stuttering may be one, the attempt should be abandoned at once, and he should be allowed to use his left hand without criticism. Those who are taught to write with the left hand should be shown the proper position of the paper, which is slanted with the top border to the right instead of to the left as is usual. It is often necessary to drill them in the use of this position, since otherwise they are likely to imitate their right-handed neighbors. They should also be allowed to write with a slight backhand slant if they so prefer.

## New York State Journal of Medicine, New York

### **49**:225-336 (Feb. 1) 1949

Value of Supplementary Protein Feeding in Aged and Chronically Infected Orthopedic Patients. A. Della Pietra.—p. 263.

Impotentia. J. G. Keshin and B. D. Pinck.—p. 269.

Giant Follicle Lymphadenopathy. S. E. Cohen and V. W. Bergstrom. —p. 273.

Dexedrine and Weight Reduction. E. P. Gelvin and T. H. McGavack. —p. 279.

Visceral Involvement in Multiple Myeloma. A. J. Gordon and J. Churg. —p. 282.

Testicular Tumors. N. C. Foot.—p. 284.

Coronary Disease in Women. S. Glotzer and H. Wolfer.—p. 287.

Unusual Reactions to Tetanus Antitoxin. J. A. Mishkin.—p. 292.

Clinical Pathophysiology of Therapeutic Exercises. H. Kraus.—p. 294.

Surface-Active Solvents in Topical Antibiotic Therapy. E. J. Grace and V. Bryson.—p. 297.

Papillary Tumors of the Thyroid Gland. G. H. Klinck Jr.—p. 302.

### **49**:337-448 (Feb. 15) 1949

Child Health Services in New York State. G. M. Wheatley.—p. 383.

Supraspinatus Tendonitis Calcarea. J. V. Robbins.—p. 389.

Common Errors in Pediatric Practice. H. Bakwin.—p. 391.

Recent Contributions to Diagnosis and Treatment of Pertussis. W. L. Bradford.—p. 397.

*New Developments in BCG Vaccination. K. E. Birkhaug.—p. 401.

Abdominal Surgery in Infancy and Childhood. E. J. Donovan.—p. 407.

Cooperative Program in Restaurant Hygiene. M. H. Thompson.—p. 414.

Importance of Vasoconstriction in Treatment of Acute and Chronic Maxillary Sinusitis. A. R. Everett.—p. 417.

Visceral Activity in Small Bowel Perforation. B. J. Ficarra.—p. 420.

**BCG Vaccination.**—According to Birkhaug, the New York State Department of Health and the Medical Society of the State of New York recommend that BCG immunization be used extensively in tuberculin-negative reactors in groups of occupationally exposed persons, such as nurses, medical students and hospital personnel; in population groups with high tuberculosis morbidity and mortality, and where there has been a known exposure to tuberculosis or where an exposure is likely to occur, as in the households of patients returning home from hospitals or sanatoriums. For the present, the vaccine will not be distributed generally.

## Occupational Medicine, Chicago

### **5**:607-826 (June) 1948

Occupational Health in Finland. L. Noro.—p. 607.

Health Costs of Urban Air Pollution. C. A. Mills and Marjorie Mills-Porter.—p. 614.

Prevalence of Disabilities Among Government Employees. A. Tish. —p. 634.

Occupational Health Service in Industry: Program for Meeting Nursing Needs of Larger Plants. Elizabeth Andrews.—p. 640.

Infectious Mononucleosis and the Occupational Physician: Survey of Literature and Analysis of Twelve Cases. G. H. Gehrmann and C. A. D'Alonzo.—p. 647.

Value of Industrial Medical Program. K. M. Morse.—p. 656.

*Berylliosis: Acute Pneumonitis and Pulmonary Granulomatosis of Beryllium Workers. W. Machle, E. Beyer and F. Gregorius.—p. 671.

*Pathologic Aspects of Acute Pneumonitis and Pulmonary Granulomatosis in Beryllium Workers. A. J. Vorwald.—p. 684.

Roentgenologic Manifestations of Pulmonary Changes Due to Exposure to Beryllium Compounds. S. A. Wilson.—p. 690.

Fume Exposure in Manufacture of Alumina Abrasives: Review of Associated Physical and Chemical Factors. C. M. Jephcott.—p. 701.

Pulmonary Changes Encountered in Employees Engaged in Manufacture of Alumina Abrasives: Pathologic Aspects. A. R. Riddell.—p. 710.

Id.: Clinical and Roentgenologic Aspects. C. G. Shaver.—p. 718.

Human Hazards in Industrial Employment. W. N. Kemp.—p. 729.

Health Hazards from Lead Paint and Zinc Chromate Paint: Incidence in Modern Construction, Maintenance and Scrapping of Ships. E. W. Brown.—p. 739.

Multivitamin Capsules and Health of Workers in Trinitrotoluene. H. L. Reed, L. C. McGee and A. McCausland.—p. 759.

Report of the Council on Industrial Health. C. M. Peterson.—p. 765.

**Berylliosis.**—Machle and his associates define berylliosis as a general disease characterized clinically by pulmonary insufficiency and with the major pathologic changes in the lung. It results from the inhalation of finely divided beryllium compounds. The characteristic lesion is a granuloma, like that seen in sarcoidosis. The major clinical syndromes associated with exposure to beryllium are: conjunctival irritation, irritation of the upper respiratory tract, dermatitis, subcutaneous granulomas, acute berylliosis and chronic berylliosis. There is a wide range in the pattern—from a case in which the patient dies with symptoms of a violent acute pneumonitis two weeks after onset, to a case in which the patient has roentgenographic evidence of disease six years after termination of exposure but is without clinical disability. An attack of acute disease has been followed two years later by the onset of chronic berylliosis, and gradations of intermediate degree occur. The differentiation between acute and chronic pulmonary disease is purely arbitrary. Diagnosis on the basis of the physical findings is not possible. The symptoms and signs, however, taken together with the characteristic onset and course, plus a history of exposure, may lead to presumptive diagnosis. Sarcoidosis, erythema multiforme, periarteritis nodosa, chronic pneumonia, miliary tuberculosis, mediastinal lymphoma, lymphangitic spread of carcinoma, mitral stenosis, Hodgkin's disease, moniliasis, other fungous disease of the lungs and the pneumonoconioses may all simulate berylliosis. The fatality rate has been estimated at 20 per cent. In situations where sizable groups of cases occurred, fatality rates ranged from 10 to 26 per cent. The prognosis in the individual case must be based on the type of onset, course and severity. The best treatment is supportive. The pulmonary insufficiency often requires use of oxygen. In the cases of mild disease, general supportive treatment with exercise to limit of comfort is indicated; in the cases of severer disease, rest in bed and continued oxygen therapy are necessary. In several cases, penicillin-streptomycin aerosol therapy was of value in dealing with intercurrent infections, but did not alter the course of the underlying disease. Specific treatment designed to aid in the elimination of beryllium, such as BAL and solubilizing agents, was without effect. Prophylaxis is now a major concern of industries handling beryllium.

**Pulmonary Disease in Beryllium Workers.**—Vorwald says that the pathologic aspects of the disease seen in beryllium workers are confined principally to the lungs and tracheobronchial lymph nodes. Two distinct types of change are recognized: (1) the acute form, which resembles a pneumonic process, attended by edema, hemorrhage and exudate, but without the polymorphonuclear leukocytic response that accompanies an acute infectious process, and (2) the chronic form, which is characterized by the presence of a diffuse pulmonary reaction and scattered granulomatous lesions throughout both lungs.

## Pediatrics, Springfield, Ill.

### 3:129-276 (Feb.) 1949

Disturbances of Water and Electrolytes in Infantile Diarrhea. D. C. Darrow, E. L. Pratt, J. Flett Jr. and others.—p. 129.
Sepsis of Obscure Origin in Newborn. W. A. Silverman and W. E. Homan.—p. 157.
Deafness Following Epidemic Parotitis (Mumps): Report of Case in Child. R. B. Scott and R. P. Crawford.—p. 177.
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Hypertension in Embryoma (Wilms' Tumor). J. G. Hughes, H. Rosenblum and L. G. Horn.—p. 201.
Vaccination as Primary Contact with Influenza A and B Viruses. Rae V. Nicholas and W. Henle.—p. 208.
Epidemic of Infectious Lymphocytosis with Diarrhea. M. G. Peterman, J. D. Kaster, E. A. Gecht and G. L. Lembert.—p. 214.
Recovery from Complete Heart Block in Diphtheria. Mary Allen Engle. —p. 222.

## Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

### 69:395-620 (Dec.) 1948. Partial Index

Electrophoretic Changes in Plasma Proteins in Patients with Pneumococcic Infections. R. A. Bruce and E. L. Alling.—p. 398.
Effects of Albumin on Hypoalbuminemia in Pneumococcic Pneumonia. R. A. Bruce and E. L. Alling.—p. 404.
Does Administration of Diethylstilbestrol to Pregnant Women Result in Increased Output of Urinary Pregnanediol? M. E. Davis and N. W. Fugo.—p. 436.
Age Factor in Estrogen-Induced Breast Cancer of Mice. M. Silberberg and Ruth Silberberg.—p. 438.
Excretion of Adrenal Corticoids in Sweat. J. Nichols and A. T. Miller Jr.—p. 448.
Comparison of Penicillin G and A Biosynthetic Penicillin with Regard to Diffusion Into Cerebrospinal Fluid. W. P. Boger and W. W. Wilson.—p. 458.
In Vitro Studies of Aureomycin, New Antibiotic Agent. Eleanor A. Bliss and Caroline A. Chandler.—p. 467.
Bactericidal Action of Streptomycin-Penicillin Mixtures in Vitro. Anna C. Nichols.—p. 477.
Complement Fixation Test for Dengue. A. B. Sabin and I. Young. —p. 478.
Effect of Progesterone Compound on Growth of Transplanted Granulosa Cell Tumor. E. E. Clifton and Shih-cheng Pan.—p. 516.
Simple Technic for Counting Megakaryocytes. E. E. Osgood.—p. 590.
*Isolation of Brucella from Apparently Healthy Individuals. E. V. McVay, Frances Guthrie, I. D. Michelson and D. H. Sprunt.—p. 607.

**Isolation of Brucella from Apparently Healthy Persons.** —McVay and his associates point out that in recent years the isolation of Brucella organisms from cases of Hodgkin's disease has caused considerable discussion. The confirmation of this finding in their laboratory and the statements in the literature that these organisms could be isolated from patients with various infections led the authors to seek an explanation. Since Brucella organisms are known to multiply in macrophages and fibroblasts, it was thought that cultures of enlarged prostates and fibrosed fallopian tubes might reveal the presence of these organisms. At present 34 prostates have been cultured. From these cultures Brucella abortus has been isolated in 2 instances and Brucella melitensis in a third. Forty-three fallopian tubes have been similarly studied. From one of these Br. melitensis has been isolated. Although none of the patients from whom Brucella organisms were obtained had any unusual symptoms prior to operation, a review of their histories revealed in all 4 cases a history of country life and contact with cows and other farm animals. In 1 instance the patient had been in contact with an animal infected with brucellosis. In all cases there was a history of the consumption of raw milk. All of the patients had a clinical record of illnesses compatible with brucellosis. None of these illnesses, however, had occurred in recent months. The serum of all 4 patients lacked agglutinins for Brucella, while their skin gave strongly positive reactions with Brucella antigen. The authors believe that brucellosis is endemic, at least in certain parts of the world, and that the organisms may be carried by a number of apparently healthy persons.

## Puerto Rico J. Pub. Health & Trop. Med., San Juan

### 24:105-200 (Dec.) 1948

Leptospirosis in Puerto Rican Wild Rats. J. H. Rust.—p. 105.
Incidence of Filariasis Bancrofti in Government Institutions for Children in Puerto Rico. J. F. Maldonado, Hernández Morales, I. Fox and C. J. Thillet.—p. 121.
San Juan Bay and Adjacent Waters: Preliminary Report of Pollution Survey. J. Rivera León, N. Biaggi and R. Pirazzi Rexach.—p. 150.
Canine Leptospirosis: First Report of Leptospirosis Canicola in Dog in Puerto Rico C. I. Boyer Jr., G. J. Dammin and F. M. Reyes. —p. 177.

## Tennessee State Medical Assn. Journal, Nashville

### 42:1-36 (Jan.) 1949

Doctors Asked to Fight Socialized Medicine: Termed Threat to All—Meeting Hears Some Criticism of Medical Profession. C. Porteous. —p. 1.
Poliomyelitis Fee Schedule Adopted. J. C. Overall and others.—p. 13.
Fluorides in Preventive Medicine. C. L. Sebelius.—p. 16.
Five-Year Review of Carcinoma of Cervix Uteri. E. W. Williams, G. S. McClellan and H. C. Francis.—p. 21.

### 42:37-74 (Feb.) 1949

Socialized Medicine. E. Kefauver.—p. 37.
Industrial Health Is Not Unilateral Responsibility. Jean Spencer Felton. —p. 39.
Early Neurosurgery in Nashville and Its Environs. C. Pilcher.—p. 45.
Intussusception in 1831. O. H. Wilson.—p. 53.

## Union Médicale du Canada, Montreal

### 78:129-252 (Feb.) 1949

Modern Concepts of Renal Physiology. E. V. Newman.—p. 133.
Importance of Disturbances of Utero-Ovarian Function for Incidence, Development and Course of Pulmonary Tuberculosis in Women; Therapeutic Conclusions. J. Albert-Weil.—p. 154.
Personal Contribution to Study of Treatment of Rheumatoid Arthritis with Gold Salts. L. Mantha.—p. 162.
Necessity of Close Collaboration Between Practitioners and Clinical Specialists in Treatment of Cancer. P. Brodeur.—p. 182.
Cancer of Thyroid Gland. R. E. Valin.—p. 184.
Cure of Cancer by Mixed Treatments; Cancer of Kidney, of Bladder, of Prostate and of Testes. P. Bourgeois.—p. 186.
*Orchiectomy in Cancer of Bladder. A. Hebert.—p. 192.
Cancer of Alimentary Canal and of Genital Organs in Children. J. E. Cabana.—p. 196.
Intracranial Tumors. F. Charest.—p. 198.
Cerebral Tumors in Children. J. L. Desrochers.—p. 203.
Cancer of Urogenital Apparatus in Children. P. Bourgeois.—p. 206.

**Orchiectomy in Cancer of Bladder.**—Hebert performed orchiectomy in 4 men aged 81, 49, 60 and 55 with cancer of the bladder. The patients presented hematuria, pollakiuria, vesical tenesmus and severe pain before the intervention. In the case of the patient aged 81 high voltage irradiation therapy had been practiced in vain for two weeks before the orchiectomy. The hematuria subsided within forty-eight hours after the orchiectomy, and the patient urinated every hour instead of every five minutes, as before the operation. He had no pain and less tenesmus. The patient died six months later from bronchopneumonia, but he was free of urinary symptoms during these last months of his life. The patient aged 49 was given 5 mg. of diethylstilbestrol daily after the orchiectomy. He made a complete recovery and is perfectly normal two and a half years after the operation. The third patient, aged 60, was given high voltage irradiation therapy after the orchiectomy. One and a half years after the operation he has no urinary symptoms and the appearance of the bladder is normal with a capacity reduced to 150 cc. The fourth patient, aged 55, was operated on in June 1948, and it is still too early to draw any conclusions. Cancer of the bladder situated at the bottom and near the neck of the bladder shows a better response to orchiectomy combined with hormone therapy than cancer involving the periureteral region. Fulguration, excision of the tumor and deep irradiation therapy should be combined with orchiectomy and hormone therapy.

## West Virginia Medical Journal, Charleston

### 45:35-52 (Feb.) 1949

Multilocular, Chylous Cyst of Greater Omentum: Its Occurrence in Three Year Old Child. R. H. Ewards and A. J. Villani.—p. 35.
Lye Burns of Esophagus. W. F. Shirkey.—p. 37.
Infarction of Appendices Epiploicae. J. D. German.—p. 41.
Carcinoma of Jejunum: Report of Case. F. L. Blair.—p. 44.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. *Single case reports and trials of new drugs are usually omitted.*

### British Journal of Ophthalmology, London

**33:**67-130 (Feb.) 1949

Fundus Dystrophy with Unusual Features (Late Onset and Dominant Inheritance of Central Retinal Lesion Showing Edema, Hemorrhage and Exudates Developing into Generalized Choroidal Atrophy with Massive Pigment Proliferation). A. Sorsby and Mary E. Joll Mason.—p. 67.
Theoretical Plan of Method for Removing Non-Ferro-Magnetic Metallic Intra-Ocular Foreign Bodies by Means of Electro-Magnetic Forces. P. M. Endt and J. ten Doesschate.—p. 97.
Notes on 221 Intra-Capsular Cataract Extractions Performed in Three Weeks at Khairpur in 1947. H. Holland and R. W. B. Holland.—p. 101.
Ocular Complications in Erythema Exudativum Multiforme with Mucous Membrane Lesions (Pluriorificial Erosive Ectodermosis of Fiessinger and Rendu, Stevens-Johnson Disease, Baader's Dermostomatitis). J. E. Wolff.—p. 110.
Conical Contact Lenses. G. D. McKellen.—p. 120.
Post-Operative Security in Cataract Operation. T. G. W. Parry.—p. 128.

### *British Medical Journal, London*

**1:**207-254 (Feb. 5) 1949

*Tuberculosis at the Crossroads. C. O. Stallybrass.—p. 207.
Analysis of 200 Cases of Ankylosing Spondylitis. N. R. W. Simpson and C. J. Stevenson.—p. 214.
Significance of Clubbing of Fingers. W. P. U. Jackson.—p. 216.
*Case of Congenital Tuberculosis. J. W. Jordan and H. Spencer.—p. 217.
Meat Ration and Blood Levels: Investigation of Indian Soldiers in Persia and Iraq, 1944. G. F. Taylor, P. N. Chhuttani and S. Kumar.—p. 219.
Total Cystectomy. B. R. Sworn.—p. 221.

**1:**255-292 (Feb. 12) 1949

The Surgeon in Industry. H. E. Griffiths.—p. 255.
5,000 Consecutive Deliveries Without Maternal Death Due to Pregnancy. N. Emblin.—p. 260.
Statistical and Clinical Review of 107 Cases of Ectopic Gestation. J. S. MacVine and D. H. Lees.—p. 263.
Endogenous Gas Gangrene Complicating Carcinoma of Colon: Report of Case. A. L. Wyman.—p. 266.
Enteritis Necroticans Due to Clostridium Welchii Type F. J. Zeissler and L. Rassfeld-Sternberg.—p. 267.

**1:**293-332 (Feb. 19) 1949

Cost of National Health Service. F. Roberts.—p. 293.
Peptic Ulcer in Glasgow: Hospital Survey. R. A. Jamieson, W. E. Smith and L. D. W. Scott.—p. 298.
The Diet, Hemoglobin Values, and Blood Pressures of Olympic Athletes. W. T. C. Berry, J. B. Beveridge, E. R. Bransby and others.—p. 300.
Sjögren's Disease, with Dryness of Bronchial Mucosa and Uncertain Lung Lesion. P. Ellman and F. P. Weber.—p. 304.
Illness in General Practice. J. Pemberton.—p. 306.
*Afebrile Cases of Melioidosis. R. Green and D. S. Mankikar.—p. 308.*

**Tuberculosis at the Crossroads.**—Stallybrass says that mortality from tuberculosis has always been regarded as one of the best indexes of the sanitary well-being of a community. In 1847 the English mortality from phthisis was 3,189 per million; nearly a century later the standardized death rate was 528 per million, one-sixth of what it was in 1847. There is evidence that the great decline in tuberculosis mortality that occurred in the later two thirds of the nineteenth century was caused mainly by improvement in socioeconomic factors, of which the rise in the real value of wages is the best gage. This rise in value resulted from the increasing productivity of machines; it facilitated better nutrition and housing, and in the home it involved a lessened exposure of women, and more especially children, to infection. In recent decades sanatorium accommodations providing segregation for early cases has become increasingly effective in preventing the spread of tuberculosis. However, family contacts and the infection of nurses still present serious problems in combating tuberculosis. The author suggests that vaccination with BCG or the vole Bacillus might meet the needs as a preventive for these two groups.

**Congenital Tuberculosis.**—The case presented by Jordan and Spencer was that of a mother and her infant. During routine antenatal examination in October 1947 it was discovered that the woman had pulmonary tuberculosis. She was delivered in May 1948. The infant, a boy, was apparently healthy at birth, and was immediately separated from the mother, but at his twenty-second day he began to take his feedings poorly, was lethargic and had fever. The abdomen became distended and jaundice appeared. The infant died thirty days after birth. Postmortem examination disclosed disseminated tuberculosis and caseous tuberculosis in the lymph nodes of the hilus of the liver. The postmortem examination of the mother, who died about three weeks after her delivery, revealed generally disseminated tuberculosis, tuberculous peritonitis and salpingitis and chronic pulmonary tuberculosis. The authors consider this case as one of congenital tuberculosis, because postmortem examination showed tuberculous lesions commensurate in size and distribution with intrauterine infection. Whether these were due to blood-borne infection through the umbilical vein or to ingestion of infected amniotic fluid is uncertain, but infection was more likely to have been through the former route, as the glands in the porta hepatis were those most enlarged. Postmortem examination of the mother revealed active genital tuberculous lesions, which were certainly present during the latter part of the intrauterine life of the child. Immediate removal of the child from contact with the mother and failure to find tuberculous infection among members of the staff attending the child make it almost certain that the mother was the source of infection.

### Journal of Bone and Joint Surgery, London

**31-B:**1-156 (Feb.) 1949

Scientific Approach to Orthopedic Surgery. S. A. S. Malkin.—p. 5.
Traction Injuries of Brachial Plexus in Adults. R. Barnes.—p. 10.
Open Wounds of Brachial Plexus. D. M. Brooks.—p. 17.
Operative Approach to Supraclavicular Plexus Injuries. J. E. Bateman.—p. 34.
Cervical Plexus Injuries as Extension of Brachial Plexus Injuries. A .S. Kerr.—p. 37.
Late Spinal Paralysis After Avulsion of Brachial Plexus. W. Penfield.—p. 40.
Treatment of Residual Paralysis After Brachial Plexus Injuries. A. M. Hendry.—p. 42.
Arthroplasty of Knee Joint: Late Results. J. E. Samson.—p. 50.
Arthroplasty of Knee: Follow-up Study. J. S. Speed and P. C. Trout.—p. 53.
Intrathoracic Dislocation of Humerus. E. F. West.—p. 61.
Premature Epiphysial Fusion at Knee Joint in Tuberculous Disease of Hip. W. Parke, G. S. Colvin and A. H. G. Almond.—p. 63.
Retrosternal Dislocation of Clavicle. J. C. Kennedy.—p. 74.
Fractures of Patella. J. C. Scott.—p. 76.

### Journal of Neurol., Neurosurg. & Psychiatry, London

**12:**1-80 (Feb.) 1949

Study of Post Ischemic Paraesthesia. W. R. Merrington and P. W. Nathan.—p. 1.
*Some Experimental and Clinical Observations on Anticonvulsive Action of Paraldehyde. F. J. de Elío, P. G. de Jalón and S. Obrador.—p. 19.
Syncope and Seizures. J. Kershman.—p. 25.
Intelligence of Patients with Friedreich's Ataxia. D. L. Davies.—p. 34.
Developmental Defects of Cisterna Magna and Dura Mater. E. G. Robertson.—p. 39.
Crushing Injuries to Skull: Clinical and Experimental Observations. W. R. Russell and F. Schiller.—p. 52.
Platybasia: Case Report. Clara Mayerszky.—p. 61.
Virus Diseases of Central Nervous System: Review. J. Gear.—p. 66.

**Anticonvulsive Action of Paraldehyde.**—De Elío and his associates recently tried paraldehyde by intravenous injection in the treatment of convulsive states produced in the course of neurosurgical operations. The good results obtained have been the basis for an experimental and clinical study of this drug. The authors stress that the toxicity of paraldehyde is low. It can be injected intravenously in doses of up to 0.2 cc. per kilogram without ill effects. Large doses have a narcotic action. The motor responses of the cerebral cortex of the cat and human beings are greatly reduced or abolished by small doses of paraldehyde. Convulsive attacks produced in the course of neurosurgical operations by cortical stimulations are immediately stopped by paraldehyde. Paraldehyde reduces or abolishes for some minutes the spontaneous cortical activity of the cat. Convulsive discharges of the cortex elicited by pentamethylenetetrazol (metrazol®) disappear immediately with the injection of paraldehyde. The anticonvulsive action is also very striking in animals given injections of convulsant drugs. A dose of paraldehyde protects an animal against large doses of strychnine and metrazol.® The anticonvulsive action appears also in the decerebrate and spinal preparations. Clinically, paraldehyde has been used in many cases to stop operative or postoperative convulsions. The authors maintain that paraldehyde injected intravenously in doses of 0.05 to 0.1 cc. per kilogram is the best agent available to break up and stop a convulsive discharge. The dose may be repeated if necessary.

## Lancet, London

### 1:209-248 (Feb. 5) 1949

Rhesus Factor: Summary Based on 200 Cases. E. N. Allott and C. A. Holman.—p. 209.
*Intestinal Lipodystrophy (Whipple's Disease). F. A. Jones and J. W. Paulley.—p. 214.
Acute Phenobarbitone Poisoning: Treatment with Picrotoxin. E. G. Sita-Lumsden.—p. 217.
Shigella Schmitzii Infection in Men and Apes. R. E. Rewell.—p. 220.
*Plasma-Protein Level and Disappearance of Evans Blue from Blood-Stream. R. J. Rossiter.—p. 222.
Suction Applied to Appendicectomy. J. Devine.—p. 223.

**Intestinal Lipodystrophy.**—Intestinal lipodystrophy was first described by Whipple in 1907; since then only about 25 cases have been reported. Most patients have been middle-aged men, and the duration of symptoms before death has usually been one to five years, though sometimes much longer. Stabbing central abdominal or epigastric pain has been common at the outset. Fever is not always present, and bleeding per rectum, when sought for, has been more often found than not. A history of "arthritis" affecting more than one joint has been given by some patients. Increasing lassitude, loss of weight, diarrhea and steatorrhea herald the terminal phase. Brown pigmentation of skin and oral mucosa and hypotension have often suggested Addison's disease. Anemia, achlorhydria, signs of vitamin deficiencies, hypoproteinemia, ascites and edema may appear before the end. The case presented here concerned a man aged 44. It does not differ materially from those previously reported. Abdominal pain was the presenting symptom and did not persist. Pigmentation together with hypotension suggested Addison's disease, but biochemical investigations, the normal reaction to the Robinson-Power-Kepler test and a lack of response to specific therapy contraindicated adrenal insufficiency. Whipple's disease may possibly originate in a primary nonspecific "jejunitis." The patient's personality coincided broadly with that found in regional ileitis and some other intestinal disorders believed to be psychosomatic.

**Plasma Protein Level and Disappearance of Evans Blue from Blood Stream.**—Rossiter found that there was a negative correlation between the slope of the disappearance curve of Evans blue, injected into the blood stream of patients with different degrees of hypoproteinemia, and the plasma protein level. The correlation was entirely with the level of albumin and not with that of globulin. The author stresses that in the determination of plasma volume by the dye method disappearance curves should always be plotted. The plasma volume should never be calculated from a single estimation of the plasma dye level, especially when the plasma protein level or the albumin-globulin ratio is abnormal.

### 1:249-290 (Feb. 12) 1949

Megalocytic Anemias. J. F. Wilkinson.—p. 249.
Palliative Surgery in Facial Palsy. C. R. McLaughlen.—p. 255.
*Benadryl in Treatment of Parkinsonism: Results in 40 Cases. G. M. S. Ryan and J. S. Wood.—p. 258.
Acute Osteomyelitis Due to Penicillinase-Producing Staphylococcus Aureus. C. C. Jeffery, S. Sevitt and Elizabeth Topley.—p. 259.
*Radical Surgery in Advanced Squamous Carcinoma. R. W. Raven.—p. 261.
Influence of Previous Diet on Effect of Glucose in Periodic Paralysis. K. Lundbaek.—p. 263.
Cerebral Abscess in Infant Followed by Recovery. D. L. B. Farley.—p. 264.

**Benadryl® in Parkinsonism.**—Ryan and Wood say that in 1947 a patient with advanced parkinsonism, who was bedridden owing to extreme rigidity and had not responded satisfactorily to classic treatment, was given diphenhydramine hydrochloride (benadryl® hydrochloride). The result was so dramatic that search was made for similar cases. The series now includes 40 cases. The 2 case histories presented indicate that the diphenhydramine was administered in 50 mg. doses three or four times a day. Reviewing their observations on 40 cases, the authors say that within ten days the therapeutic effect reaches its maximum. Thereafter increase in dosage cannot be expected to produce any further improvement. Physical therapy and rehabilitation exercises are useful when the greatest relaxation has been attained. Diphenhydramine can be used in conjunction with the classic forms of treatment. When it is intended to treat with diphenhydramine a patient already receiving belladonna, it is unwise to stop the latter suddenly. In postencephalitic parkinsonism sudden withdrawal of the patient's usual medicine may lead to a severe oculogyric crisis, which will prejudice him against the new treatment. Diphenhydramine does not cure; its effect is purely palliative, and complete relapse occurs within forty-eight hours of withdrawal. No case in this series showed any toxic effect. Two of the patients have now taken 200 mg. daily for over eighteen months without ill effects.

**Radical Surgery in Squamous Carcinoma.**—Raven calls attention to the value of radical surgical excision in certain types of advanced squamous carcinoma. The 5 patients whose case records are cited were unsuitable for any other form of treatment than surgery. They included 1 case each of: carcinoma of the tongue; of the maxilla, nose and face; of the alveolus and mandible; of the ear and petrous bone, and of the penis. The patients with carcinoma of the tongue and of the penis were pronounced hopeless; after radical operation the 2 patients have lived busy and useful lives for seven years without recurrence. The patient operated on for carcinoma of the ear and petrous bone was also returned to work and was free from recurrence eleven months after operation; twenty-two months after operation there is local recurrence, but his general health is good. The authors describe the treatment of lymph nodes, postoperative irradiation and the repair of defects. They emphasize the importance of team work in the management of these advanced cases of carcinoma.

## Medical Journal of Australia, Sydney

### 1:85-112 (Jan. 22) 1949

*Second Example of Anti-Lewis Serum Found in Australia. Vera I. Krieger and R. T. Simmons.—p. 85.
Pathologic Findings in Some Deaths During Anesthesia. K. Bowden—p. 86.
Deaths During Anesthesia. E. Gandevia.—p. 93.
Today's Problems of Mental Hospitals. B. F. R. Stafford.—p. 94.
Administration and Mental Invalidity: Historic Introduction to Recurring Problem. J. Bostock.—p. 96.
Indications for Medical and Surgical Treatment in Essential Hypertension. Addie Walker.—p. 98.

**Anti-Lewis Serum in Australia.**—Krieger and Simmons point out that in 1946 Mourant of Britain reported a "new" human blood group antigen which occurred in 25 per cent of the English population. The "new" agglutinogen, which was called the Lewis antigen, was shown to be independent serologically of the ABO, MN, Rh, P and Lutheran systems. Limited family studies showed that the agglutinogen is inherited and is probably a dominant mendelian character. After briefly mentioning the first Australian report on the Lewis antibody, presented by Jakobowicz and her co-worker in 1947, the authors present what they believe to be the second Australian case report on the Lewis antibody. Their patient was a single woman, aged 45, who, because of low concentration of hemoglobin, was given 2 pints of apparently compatible group O blood on the same day. No reaction was observed. Four weeks later a second transfusion of group O blood was commenced. A severe reaction developed with vomiting, severe rigor and anuria after 200 cc. of this blood had been given. The author describes tests made on the serum of this patient and on the serum of the first Australian patient with the anti-Lewis serum and also on four anti-Lewis serums provided by Mourant. Almost identical reactions with a large number of group O cells were obtained with all six antiserums. The reactions in all cases were stronger at room temperature (20 C.) than at 37 C. The two donors whose blood was given in the first transfusion to the patients whose case is reported here have since been tested and the blood of one was found to contain the Lewis antigen while that of the other did not. Although it was not possible to test the blood of the donor used in the second transfusion for the Lewis factor, it can reasonably be assumed that he had the Lewis antigen in his blood and that the transfusion of his blood caused the reaction in the patient who had become immunized to this factor as the result of the first transfusion. Subsequent tests on samples of the patient's serum during a period of eight months following the transfusion reaction revealed a progressive deterioration in the titer of the Lewis antibody to scarcely detectable levels.

### Quarterly Journal of Medicine, Oxford

**18:**1-80 (Jan.) 1949

Honeycomb Lungs. N. Oswald and T. Parkinson.—p. 1.
Bronchoscopic Studies in Primary Tuberculosis in Childhood. J. H. Hutchison.—p. 21.
*Effect of Smoking on Water Diuresis in Man. J. M. Walker.—p. 51.
Nature and Significance of Stippling in Lead Poisoning, with Reference to Effect of Splenectomy. A. J. S. McFadzean and L. J. Davis.—p. 57.
Reduction in Coronary Flow by Pituitary (Posterior Lobe) Extract in Relation to Action of Nicotine and to Smoking. Edith Blübring, J. H. Burn and J. M. Walker.—p. 73.

**Effect of Smoking on Diuresis.**—According to Walker it is generally known that nicotine stimulates the sympathetic ganglions. Various observers have shown that the amount absorbed from one or two cigarets is sufficient to raise the blood pressure by 20 mm. and the heart rate by 10 to 12 beats per minute. Recently the liberation of the antidiuretic hormone has been described. This paper presents further studies on the antidiuretic effect of smoking. Experiments on 13 students showed that inhibition of water diuresis was caused by the smoking of one cigaret in 7 subjects and of two cigarets in 6 subjects. Nonsmokers were more susceptible to the effect of smoking than smokers. In 3 students the intravenous injection of 1.6 to 3.0 mg. of nicotine acid tartrate inhibited water diuresis. The inhibitory effect of smoking and nicotine was accompanied by a rise in the total chloride excretion and was probably due to the liberation of posterior pituitary hormone. The effect of smoking was of the same order as that of the intravenous injection of 50 milliunits of pituitary (posterior lobe) extract. There is evidence that the inhibition of water diuresis was not due to a nonspecific effect of the nausea that often accompanied smoking or the injection of nicotine. Morphine in therapeutic doses does not inhibit water diuresis in man.

### Acta Radiologica, Stockholm

**30:**267-418 (Nov. 30) 1948. **Partial Index**

Method for Determination of Radiation Dose Produced by Artificial Radioactive Substances in Tissue. T. Wahlberg.—p. 291.
Angiocardiography in Coarctation of Aorta. E. F. Salén and T. Wiklund.—p. 299.
Early Diagnosis of Acute Septic Osteomyelitis, Periostitis and Arthritis and Its Importance in Treatment. S. Jorup and S. R. Kjellberg.—p. 316.
*Radiation Injuries Produced by Contact Roentgen Therapy. E. Poppe.—p. 365.
Treatment of Fibroadenomatosis Mammae with Short Wave Therapy. H. Mossberg.—p. 415.

**Radiation Injuries Produced by Contact Roentgen Therapy.**—Poppe defines contact roentgen therapy as the treatment with a short target skin distance, low voltage and great intensity. The technic used at the University Hospital of Oslo employed a target skin distance of 18 mm. unfiltered, or 22 mm. with additional filter, 2 milliamperes and 50 kilovolts. Contact roentgen therapy was used particularly for skin cancer. The dosage was 4,000 to 5,000 r applied in a single treatment. In some cases a disfiguring scar with telangiectasis remained after treatment. In 17 of 1,384 cases in which the dorsal surface of fingers or toes had been treated with roentgen contact therapy, swelling and tenderness persisted for several months after treatment and occasionally ulcerations developed. In addition to these 17 cases, the author cites 7 cases in which definite injuries resulted after contact roentgen ray therapy. In 2 of these the lesions were in the region of the ear, and in the other 5 they developed on the dorsal surface of toes and fingers after treatment of warts and keloids. The author stresses that the use of contact roentgen therapy on hands and feet demands special precautions. If it appears impossible to give the treatment without using an additional filter, it is preferable to adopt other methods—e.g., electrodesiccation. It would be an advantage to have an apparatus which could be operated at a lower voltage, down to 20 kilovolts, so that an even greater fall of intensity with depth could be obtained. If the apparatus with a tension of 50 kilovolts is used, it is safer to fractionate the dose when the treatment is applied to fingers and toes.

### Deutsche medizinische Wochenschrift, Stuttgart

**74:**161-192 (Feb. 11) 1949. **Partial Index**

Chemotherapy of Tuberculosis: Review Presented at the Fall Meeting of Association of Middle-Rhine Surgeons at Freiburg on October 16, 1948. L. Heilmeyer.—p. 161.
*Some Remarks on Reciprocal Independence of Changes of Dynamics of Heart and of Electrocardiogram in Man. K. Blumberger.—p. 167.
Treatment of Surgical Diseases with Paravertebral and Stellate Anesthesia. H. Nettel and H. Nieckau.—p. 169.
"Saving Adjustment" of Blood Metabolism to Albumin Deficiency. H. Overkamp.—p. 172.
Preliminary Report on Observations in Prisoners of War Returning Home with Tendency to Edema with Regard to Rheumatism and Foci. H. Wortmann.—p. 174.

**Independence of Heart Dynamics and Electrocardiogram.**—According to Blumberger, cardiac force, function and decompensation depend on mechanical or dynamic processes, which may be measured by the changes in pressure, volume and time. They may be modified by peripheral influences to a greater extent than the electrocardiogram. The mechanical and the so-called electric duration of the systole are not always the same, and both may undergo changes in opposite directions. In hypertensive persons an increase in the maximum systolic blood pressure from 160 to 220 mm. of mercury and of the medium blood pressure from 120 to 146 mm. of mercury causes considerable prolongation of the first period of the ventricular systole and shortens the expulsion period. This indicates clearly a slowing of the rise of the systolic pressure in the ventricles and a reduction of the cardiac output. The electrocardiogram, however, is not influenced. The same differences may be demonstrated with an alternating pulse. Longer first periods of the ventricular systole and shorter periods of expulsion are associated with a smaller rather than with a stronger pulse, while alternations of the cardiac function are as a rule without influence on the electrocardiogram. The electrocardiogram of patients in whom damage to the cardiac muscle of myocardial nature has been diagnosed early during the two last years of the war showed characteristic changes, while studies of the first period of the systole and of the period of expulsion suggested a normal heart action. Changes in the duration of the isometric and isotonic contractions occurred only in patients with simultaneous decompensation of the heart. Purely muscular insufficiency of the heart was observed many times without the slightest change in the electrocardiogram. Complete dynamic compensation of the heart may be obtained by treatment, without a corresponding change in the electrocardiogram. One should avoid the common error of evaluating the heart function on the basis of the so-called exertion—or work—electrocardiogram.

### Geburtshilfe und Frauenheilkunde, Stuttgart

**9:**1-74 (Jan.) 1949. **Partial Index**

Combat of Postoperative Thrombosis and Embolism. T. Heynemann.—p. 8.
Value of Postoperative Irradiation in Uterine Carcinoma. H. Kirchhoff.—p. 17.
*Irradiation of Spleen. R. K. Kepp.—p. 24.
Clinical Aspects of Adenocarcinoma of Uterine Cervix. H. Drescher.—p. 31.
Heat Coagulation of Cervical Mucosa in Chronic, Refractory Cervicitis. O. H. Moell.—p. 57.

**Irradiation of Spleen.**—According to Kepp irradiation of the spleen was introduced into gynecologic therapy after attention had been called to its favorable effect on blood coagulation. Irradiation is carried out with 180 or 200 kilovolts and a 0.5 mm. copper filter. The focus distance is 40 cm. and the size of the field 6 by 8 or 8 by 10 cm. After the location of the spleen has been determined by percussion, the roentgen tube is directed slightly upward so that irradiation of the ovaries is avoided. The rays as applied by the author produce a surface dose of about 135 r, of which about 60 r reach the spleen. This dosage produces no undesirable secondary effects.

The author reviews results he obtained in 65 cases. So-called juvenile hemorrhages accounted for the majority (39) of the cases. Functional hemorrhages in sexually mature women and in women of the menopausal age, hemorrhages in the presence of adnexitis and hemorrhages resulting from thrombopenia were the other conditions for which irradiation of the spleen was done. In nearly three fourths of all the patients the existing hemorrhage was arrested by the irradiation. Regulation of the menstrual cycle was effected in 40 per cent of the cases. The mode of action of this treatment has not been explained, but it is assumed that the coagulability of the blood is increased by the products of destruction deriving from the splenic parenchyma, which is highly sensitive to irradiation.

## Gynaecologia, Basel

### **127:**1-64 (Jan.) 1949. **Partial Index**

*Sacroiliac Joint: Changes During Pregnancy and Injuries During Delivery. *I. Györffy.—p. 23.*
Question of "Clear Cells" in Mucosa of Human Uterus. F. Feyrter and J. Froewis.—p. 33.
*Early Recognition of Air Embolism During Operation for Myoma. W. A. Jauch.—p 49.

**Sacroiliac Joint: Changes During Pregnancy and Obstetric Injuries.**—Györffy points out that the joints of the pelvic region become more mobile during pregnancy. The sacroiliac joints supposedly undergo changes similar to those occurring in the symphysis. The sacroiliac joints may become damaged during delivery and even during pregnancy. Injuries to the ligaments and capsules and the resulting hemorrhages may bring on pains that may be so severe that the patient is obliged to remain immobilized for weeks until healing takes place. The author recommends application of a plaster of paris cast in order to insure complete rest for the pelvic region.

**Early Recognition of Air Embolism.**—Jauch reports the case of a woman, aged 48, who was operated on for a large myoma of the uterus. Immediately on the exposure of the myoma a large vein could be seen, which emerged from the tumor to the surface. By pulling on the large tumor (the size of a man's head) negative pressure was produced in the abdominal cavity, which became audibly equalized after the largest part of the tumor had emerged from the abdominal incision. Immediately a chain of pea-sized to bean-sized air bubbles could be seen in the vein passing along the surface of the tumor and streaming in the direction of the uterine cervix. Manual pressure was exerted at once in order to prevent further passage of air bubbles from the tumor circulation to the patient's body circulation. Pressure was maintained until the uterine vessels had been clamped and divided. The author believes that only a small quantity of air entered the patient's general circulation. It is generally assumed that a small amount of air is tolerated without symptoms.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

### **93:**1-80 (Jan. 1) 1949. **Partial Index**

*Extragenital (?) Chorionepithelioma Appearing as a Primary Solitary Tumor of the Lung in a Man. L. D. Eerland.—p. 5.
Amebic Dysentery and Amebiasis. P. B. van Steenis.—p. 11.
*Hypercalcemia in Besnier-Boeck's Disease. S. A. Westra and J. F. Visser.—p. 18.

**Extragenital Chorionepithelioma Appearing As a Solitary Lung Tumor.**—Eerland presents the case of a man, aged 25, who complained of pain in the side and coughing. Roentgenoscopy of the thorax disclosed a round shadow, and pulmonary echinococcus was thought of but could not be confirmed. Because of *rapid enlargement of the round shadow,* a pneumonectomy was performed. Examination of the surgical specimen disclosed a metastasis of a chorionepithelioma. On the basis of this diagnosis the urine was tested and a positive Aschheim-Zondek reaction and a positive melanophoric reaction were obtained. Subsequently other metastases appeared and the patient died. *At necropsy additional metastases* were discovered, but the testes were free from tumor tissue. The author cites other reports on extragenital chorionepithelioma in men and suggests that in the reported case the growth may have originated in a small retroperitoneal teratoma.

**Hypercalcemia in Besnier-Boeck's Sarcoid.**—Westra and Visser say that the literature of the last decade has repeatedly called attention to the occurrence of hypercalcemia in patients with Besnier-Boeck's disease. There is as yet no explanation for this concurrence. The authors cite the case of a young man with Besnier-Boeck's disease with hypercalcemia, increased phosphatase content of the serum and increased elimination of calcium in the urine. A surgically removed parathyroid, although free from granuloma, showed some hyperplasia. After the operation the calcium content decreased to normal values, but after five months it increased again. The authors feel that there is no argument for a direct connection between hyperplasia of the parathyroids and Besnier-Boeck's disease, but they believe that there might be an indirect connection.

### **93:**157-236 (Jan. 15) 1949. **Partial Index**

Inhibition of Function of Bone Marrow by Malaria: 10 Cases. H. van den Ende.—p. 163.
Investigations on Increased Incidence of Contact Dermatitis in Workers Processing Quinine. J. F. C. Werz.—p. 170.
Does Pregnancy Toxicosis Produce Residual Manifestations? J. L. Mastboom.—p. 176.
*Massive Deposits of Calcium Carbonate in Gallbladder. J. Glazenburg and H. J. Jongepier.—p. 186.

**Massive Deposits of Calcium Carbonate in Gallbladder.**—Glazenburg and Jongepier point out that massive deposits of calcium carbonate in the gallbladder were reported in the English language literature under the terms "limey," "milk" or "calcium" bile and in the German literature as "lime milk bile." They report the case of a woman, aged 53, who had had repeated gallstone colics during the weeks preceding her hospitalization. A stone which consisted largely of cholesterol and bilirubin was found at operation lodged in the cystic duct. On the side directed toward the gallbladder a rough white clump was found which consisted entirely of calcium carbonate. In the gallbladder was a whitish fluid which contained crystals of calcium carbonate and traces of calcium phosphate. There were signs of chronic infection and thickening of the bladder wall. The possibility of this disorder should be kept in mind in patients who have been treated with large doses of vitamin D and calcium, particularly if disorders of the gallbladder had existed before.

## Nordisk Medicin, Stockholm

### ***41:**1-54 (Jan. 7) 1949.* **Partial Index**

Epidemic Diarrhea in the New-Born: Review. A. Lichtenstein.—p. 1.
*Penicillin Treatment of Acute Osteomyelitis. K. Lind.—p. 2.
Can Rheumatic Polyarthritis Be Caused by Trauma? E. Jonsson and K. Berglund.—p. 7.
*Frontal Lobotomy in Chronic Psychoses. J. Elleberg.—p. 16.
Fistulas of Unknown Origin in Abdominal Wall in Syphilitic Patients. S. Baastrup Thomsen and Else Møller.—p. 21.

**Penicillin Treatment of Acute Osteomyelitis.**—Lind says that the results of penicillin treatment in acute osteomyelitis depend less on the dosage, provided it is over 100,000 units daily, than on the length of time of its application. Penicillin should be administered for two or three weeks (preferably for a week after the temperature is normal), so that the total dosage is at least 1,000,000 units. Surgical intervention can usually be avoided or limited to incision of larger abscesses. In case of intervention there should always be primary suture. Local treatment with penicillin has no certain beneficial effect. Intraosseous injection of penicillin into the focus seems to have many advantages and no harmful effects. Sulfonamide compounds administered simultaneously with penicillin are without demonstrable value but should perhaps be given, and in pneumonia doses, because of possible penicillin-resistant bacteria and because sulfonamide compounds seem to heighten the effect of penicillin. Immobilization should continue till the subjective symptoms have disappeared. The question of when weight bearing can be started must depend on roentgen examination three or four weeks after the start of the disorder. Movement should begin when the subjective symptoms allow. Sixteen cases of acute osteomyelitis in femur, tibia and humerus treated with *penicillin are reported.* In 3 cases the disease, inadequately treated, became chronic. In 2 cases in which treatment was apparently adequate, mild symptoms appeared one year and eight months, respectively, after the onset. Recovery resulted in 11 cases observed for eight to twenty-five months.

**Frontal Lobotomy in Chronic Psychoses.**—Elleberg reports on the results of bilateral frontal lobotomy in 43 patients from St. Hans Hospital for Women, observed for thirteen to twenty-three months after operation. Careful attention was paid to postoperative education. Of the 6 patients with manic-depressive psychosis 3 were discharged; in 2 the condition was unchanged, and in 1, aggravated. In 11 of the 34 schizophrenic patients the worst of the symptoms which indicated lobotomy had subsided completely; in 8 these symptoms had partially abated, and 15 did not improve. One patient with emotional instability was much improved and discharged, 1 with senile melancholia of paranoid kind was improved, 1 with psychasthenia was not improved. Six cases are described in detail. There was no postoperative deaths. One schizophrenic patient died during the observation period. Two patients had epileptic seizures. The results are considered satisfactory in view of the highly unfavorable prognosis in all cases, and lobotomy is being performed in similar cases.

## Prensa Médica Argentina, Buenos Aires

### *35:2083-2120* (Oct. 29) 1948. Partial Index

*Succinic Acid Stimulating Respiration. M. R. Castex, L. E. Camponovo and F. E. Labourt.—p. 2083.

**Succinic Acid Stimulating Respiration.**—Castex and collaborators found that succinic acid, when injected intravenously, stimulates respiration and that this effect lasts two to forty-eight hours. They report observations on three groups of normal persons given intravenous injections of 5 cc. of a 1 per cent succinic acid solution (50 mg. of the drug). The effect on respiration was observed in two groups of persons in whom the functional tests of respiration were performed three minutes after the injection and again one hour later. In 7 patients in a state of anoxia due to disease of the respiratory tract, it was observed that the intravenous injection of the drug, stimulated respiration, as shown by the increase in the vital capacity, the complementary air and reserve of the air. This effect lasted for more than one hour. In a patient in the course of an attack of bronchial asthma the drug proved to have a constant stimulating effect on respiration which lasted for more than one hour and an antispasmotic effect on the bronchial musculature. Intravenous injection of 50 mg. of succinic acid into 9 persons in the course of provoked anoxemia caused diminution of the amplitude and frequency of respiration with a tendency to return to normal. Of 4 persons with normal electrocardiograms, the intravenous injection of 50 mg. of succinic acid produced a positive T wave in the precordial leads in 2 and in the second lead in 1. Of 13 persons with pathologic changes in the electrocardiogram, intravenous injection of 50 mg. of succinic acid caused an increased voltage of the T wave in the precordial leads in 9. The changes in the electrocardiogram after exercise were less marked after the intravenous injection of succinic acid in 3 of 6 patients with anginal syndrome and positive effort test. Electrocardiograms demonstrated that succinic acid injected intravenously provokes better utilization of oxygen by the myocardial fibers.

## Presse Médicale, Paris

### 57:121-136 (Feb. 5) 1949

Criticism on Obesity from Retention of Water. E. Azerad and Berthaux. —p. 121.

*Autochthonous Malaria in France. L. Ferrabouc.—p. 122.

**Autochthonous Malaria in France.**—According to Ferrabouc, as a consequence of World War I cases of "autochthonous" malaria have been observed in France. Soldiers from Indo-China and workmen from North Africa have been the chief carriers. With World War II the incidence of malaria in France increased during the period of 1940 to 1946 and three recent "autochthonous" cases, one of them in the neighborhood of Paris, were observed in 1948. Primary inoculation with the plasmodia may be manifested by fever which continues on a fairly constant level for several weeks, the so-called invasion fever, which makes differential diagnosis from prolonged influenza, typhoid and typhobacillosis difficult in a country in which malaria is not endemic. Clinically suspected and confirmed by the laboratory, malaria is readily cured. For primary malaria of medium severity the following treatment is recommended: The patient is started on a treatment of attack with 2 Gm. of quinine daily for six days. He then is given 0.30 Gm. of quinacrine hydrochloride daily for five days, followed by 0.03 Gm. of pamaquine naphthoate N. F. for three days. Maintenance treatment for the following six weeks consists of 0.20 Gm. of quinacrine hydrochloride on three days within one week.

### 57:181-196 (Feb. 26) 1949

Limitations of Antibiotic Medication with Reference to Apoplectic Type of Cerebrospinal Meningitis. J. Cathala, R. Laplane, Contamin and Vasef.—p. 181.

*Psychotherapeutic Trial in Certain Pain Syndromes of Amputees. P. Padovani and M. Bachet.—p. 182.

Roentgen Ray Diagnosis of Disturbances of Cardiac Rhythm Related to Auriculoventricular Dissociation ("Block-Flutter-Ventricular Tachycardia"). R. Froment, A. Gonin, L. Gallavardin and P. Cahen. —p. 183.

Pathogenesis and Treatment of Premenstrual Syndrome. E. Juster. —p. 184.

**Psychotherapy in Pain Syndromes of Amputees.**—Padovani and Bachet applied psychotherapy to 13 amputees, all but 1 of whom had lost one of their lower extremities and had severe pain in the stump, which was not infected or mechanically defective. Psychic discomfort and the phenomenon of aging are closely connected with the pain of amputees. The emotive genesis of this pain is emphasized. It is different from psychogenesis the substratum of which may be reduced to an association of ideas of the unconscious. The patients were hospitalized; treatment was instituted seven days after the admission and was applied two or three times a week for two or three weeks. Therapy consisted in putting the patient in a state of perfect calmness, muscular relaxation and finally of complete psychic void. Five patients made a complete recovery; in 1 of them each attack of pain ended in a convulsive fit, and in 1 diabetes insipidus was associated with excruciating pain in the stump. The seizures as well as the polyuria disappeared. Two patients were improved considerably: sleep returned to normal, anxiety disappeared, emotivity was normal and severe attacks of pain ceased.

## Progrès Médical, Paris

### 77:1-24 (Jan. 10) 1949

*Disobliterating Endarteriectomy in Treatment of Diabetic Arteritic Gangrene. R. Boulin, P. Uhry and Nogrette.—p. 3.

Case of Pleurisy with Transient Eosinophilia Associated with Labile Infiltration of Lung in Subclavicular Region of Same Side. L. Binet and H. Bour.—p. 11.

Treatment of Neuralgias of Extremities with Periarterial Procaine Hydrochloride Infiltration. B. G. Tsinoukas.—p. 12.

**"Disobliterating" Endarteriectomy in Diabetic Gangrene.**—Boulin and his co-workers performed a "disobliterating" endarteriectomy on 2 diabetic male patients aged 56 and 46, respectively. Extensive gangrene of the foot had resulted from trauma in the first patient with latent diabetic arteritis. Arteriography was the guide for "disobliterating" endarteriectomy. A longitudinal axial arteriotomy of about 12 cm. was made and heparinization was carried out during and after the intervention. Favorable results were demonstrated by postoperative control arteriography. In spite of the extent of the gangrene, tissue repair occurred within seven months. The second patient had arteritis with gangrene associated with severe pain. Arteriography permitted localization of thrombosis of the left iliac artery, and was a guide for "disobliterating" endarteriectomy. Excellent results were demonstrated on postoperative control arteriography. The unbearable pain subsided completely. "Disobliterating" endarteriectomy consists of the removal of the middle and inner coats of the artery in the obliterated segment and as far as possible in the parietal zones of the arteritis, while the elastic, healthy, outer coat with the adventitia is saved. Postoperative arteriography demonstrated absence of thrombosis in the segment operated on and absence of aneurysmal dilatation. "Disobliterating" endarteriectomy performed on patients of not too advanced age and in satisfactory general condition may make amputation unnecessary.

# Book Notices

**Surgery of the Hand.** By Sterling Bunnell, M.D., Consultant in Hand Surgery to the Surgeon General. Second edition. Cloth. Price, $16. Pp. 930, with 780 illustrations. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C. 2, 1948.

A number of monographs on the surgery of the hand have been written by English, French and American surgeons, but none has approached in scope or comprehensiveness Bunnell's "Surgery of the Hand." The second edition of this unique contribution is enlarged by 200 pages, and contains many new and beautiful illustrations, some in color and many of them contributed by younger surgeons working under Dr. Bunnell's guidance and direction in the military hospitals designated as hand centers during the latter years of the war. No more convincing evidence could be produced of the value of the program that was evolved for the care of patients with injured hands, nor of the influence Dr. Bunnell exerted on his younger colleagues, than the many illustrations of the results obtained by Fowler, Frackelton, Graham, Howard, Littler, Macomber, Payne, Shaw and others of the younger men who took part in this extensive program and whose excellent results Bunnell has generously included among the illustrations in this new edition.

In reviewing a volume of such wide scope one can only point out a few of the changes and improvements that have been made. Chapter 5 on scar and flexion contractures has been enlarged from 65 to 104 pages, and many new and striking illustrations have been added. A discussion of local ischemic contracture involving the intrinsic muscles of the hand appears for the first time in this edition. Particularly in chapter 6 on bones, chapter 7 on joints and chapter 10 on intrinsic muscles of the hand and loss of the thumb, new material with many thought-provoking diagrams illustrating new and sometimes novel approaches to the problems involved in the treatment of the injured hand are presented. Methods of compensating for extensive injury to the bony framework by the use of grafts of cancellous bone, rib grafts, tibial grafts, transplantation of a metatarsal, shifting of an uninjured metacarpal to replace an adjacent hopelessly damaged metacarpal, bone block to provide fixed abduction of an injured thumb, new methods of repair of damaged extensor tendons—these and similar procedures indicate a few of the many problems that have been presented along with excellent illustrations of the results secured in their treatment.

The first edition of "Surgery of the Hand" was an outstanding contribution to surgical literature. In this new second edition the author has gone still further and added new and helpful ideas and suggestions and presented them with force and clarity. Every surgeon who is interested in the surgery of the hand will study it with profit and with interest.

**The Training of a Doctor.** Report of the Medical Curriculum Committee of the British Medical Association. Boards. Price, 7s.6d. Pp. 151. Butterworth & Co., Ltd., Bell Yard, Temple Bar, London, W.C. 2, 1948.

This is the official report of the Medical Curriculum Committee of the British Medical Association. Apparently, under a different system of medical education from ours they have come to the same problems. Thus they find that insufficient time is given to psychiatry and that the teaching given is inadequate, that there is insufficient recognition of the importance of social medicine, industrial medicine and public health and that there is a shortage of teachers in the basic medical sciences because it takes too long to get a medical degree before turning to specialization of this type. One must realize that the internship appeared in British medical education only in recent years. The British committee also places more stress on pediatrics than has previously been placed on this subject. There were majority and minority reports on pediatrics—the majority group insisted that pediatrics should be embraced by medicine and examination given as a part of examination in medicine, while the minority group believed that pediatrics should rank with medicine, surgery and obstetrics as one of the four major subjects in the curriculum. The report merits careful consideration by everyone interested in medical education.

**Voluntary Medical Care Insurance in the United States.** By Franz Goldmann, M.D. Cloth. Price, $3. Pp. 228. Columbia University Press, 2960 Broadway, New York 27, 1948.

According to the jacket of this work the book will answer two questions: 1. Is voluntary medical care insurance here to stay? 2. Will it eventually be made part of a broad national health program or succumb before legislation for compulsory health insurance? The book traces the history of voluntary insurance in the United States and the various methods of medical practice and concludes that voluntary medical insurance can serve selected economic groups only. Professor Goldmann is convinced that the idea of a nationwide program of voluntary medical care insurance is unrealistic, and he feels that in the long run the public will not be satisfied with prepayment plans which meet only a part of its total medical care needs and that physicians cannot be expected to be content with plans which disregard preventive services for the apparently healthy, do only half a job for the sick and impede the practice of psychosomatic medicine. He does see, however, in voluntary medical care insurance a chance to make real progress within its natural limitations and to help tens of millions of self-supporting people to lead personally satisfying and self-sufficient lives. The book fails to answer the question that it raises, whether or not compulsory health insurance will eventually take over voluntary plans. Apparently Professor Franz Goldmann is not yet ready to predict the ultimate fate of sickness insurance in the United States. He sees great danger from the use of federal funds to subsidize voluntary plans. His stature as a scientist rises by his avoidance of the attitude of soothsayer.

**The Parathyroid Glands and Metabolic Bone Disease: Selected Studies.** By Fuller Albright, A.B., M.D., Associate Professor of Medicine, Harvard Medical School, Boston, and Edward C. Reifenstein, Jr., A.B., M.D., F.A.C.P., Consultant-in-Charge, Department of Clinical Investigation, Sloan-Kettering Institute of Cancer Research, Memorial Hospital Cancer Center, New York. Cloth. Price, $8. Pp. 393, with 157 illustrations. Williams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2, 1948.

The work of the reviewer of this book is easy for two reasons: First, the authors themselves have included a critical review with the preface, and, secondly, the book is so outstanding that all a reviewer needs to do is to thank Drs. Albright and Reifenstein for having placed so much of interest in 400 pages.

Although the book is primarily intended for students of the subject, it will be read with profit by all physicians. It contains chapters on the normal and pathologic physiology of the parathyroid glands, clinical hypoparathyroidism, clinical hyperparathyroidism, the mode of action of vitamin D and dihydrotachysterol, general considerations of metabolic bone disease, with separate chapters on osteoporosis, osteomalacia, polyostotic fibrous dysplasia (osteitis fibrosa disseminata), and Paget's disease. In this book are considered all of the splendid advances which these authors and their associates have made in the understanding of the physiology and pathology of mineral and bone metabolism. There are excellent photographs and roentgen ray reproductions which illustrate the conditions under discussion.

There is an excellent appendix in which the authors' methods of analyzing and charting metabolic data are outlined; this is followed by a comprehensive bibliography and author and subject index.

This volume was doubtless written, first, because the authors wanted their thoughts on paper, but, more importantly, because physicians and scientists throughout the world were most insistent that these authors share their experience which has been so large and unique.

**The Shame of the States.** By Albert Deutsch. Cloth. Price, $3. Pp. 188, with illustrations. Harcourt, Brace, and Company, Inc., 383 Madison Ave., New York 17, 1948.

Recent years have seen exposés of the deficiencies of our state hospitals for the mentally disturbed. Such novels as "The Snake Pit" and "The Stubborn Wood" have focused public attention on the deficiencies in custodial and medical care. This book is certainly not a sober approach to its subject. It is a startling exposé in every way, from the language used to the pictures. Most of the American public became aware of the situation when *Life* magazine filled a whole section with similar pictures and legends. Already there are powerful movements toward improvement in the situation. However, the situation is bad not so much for lack of knowledge of its nature and scope as for inability to enlist sufficient public interest and public funds to bring about needed improvement. In his final chapter Deutsch says that not a single state mental hospital in the whole country meets all the minimum standards of care and treatment established twenty years ago by the American Psychiatric Association. He provides his own concept of an ideal state hospital, from entrance of the patient into the institution to his ultimate maximum improvement. Perhaps by error of the publisher there is a legend on a picture facing page 57 which calls attention to "a corner of a disturbed ward in which some forty patients were milling about in various stages of excitement or lethargy." The picture shows seven women, all of whom seem to be completely relaxed and perhaps most of them sound asleep.

**Methods of Psychology.** T. G. Andrews, editor. Cloth. Price, $5. Pp. 716, with illustrations. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W.C. 2, 1948.

The social science psychology is today in the stage of technical development that characterized some of the medical specialties in their period of growing pains. Often a field of science opens and broadens only after new instruments or technics have been invented and become applicable by great numbers of trained investigators. This might be said of the use of such instruments as the stethoscope and the electrically lighted instruments that are used in medicine or of the technics of Freud, Jung and Adler. The methods developed by the modern psychologists are already numerous and have begun to be applied not only in research but in practice in industry and education. The editor of this volume and the authors selected are recognized leaders in the field. The book will give to the physician and particularly to the workers in the field of psychiatry a good insight into the path by which psychology is advancing.

**Neurosurgical Pathology.** By I. Mark Scheinker, M.D., Assistant Professor of Neuropathology and Assistant Professor of Medicine (Neurology), University of Cincinnati, Cincinnati. Fabrikoid. Price, $8.75. Pp. 370, with 238 illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Illinois; Ryerson Press, 299 Queen St., W., Toronto 2B; Blackwell Scientific Publications, Ltd., Oxford, England, 1948.

"Neurosurgery Pathology" is a nicely written and attractively printed monograph dealing with the central nervous system exclusively. The first 146 pages are devoted to the subjects of cerebral swelling and central nervous system injuries. Tumors of the central nervous system occupy the next 167 pages. The balance of the book contains briefer accounts of cerebral abscesses and hydrocephalus. A good bibliography and an index complete the book.

Dr. Scheinker, who is well known for his work in neuropathology, has made a distinct contribution by organizing many of his own concepts and presenting them in the form of a monograph for his readers. This not only should interest his colleagues in the field but should be of special value to the young man who is extending his studies in neurology in anticipation of making the field his specialty. Omission of a number of subjects usually dealt with in books on neuropathology has in no way detracted from the value of the present monograph.

**Acclimatization in the Andes: Historical Confirmations of "Climatic Aggression" in the Development of Andean Man.** By Carlos Monge, M.D., Sc.D., Director, Institute of Andean Biology, University of San Marcos, Lima, Perú. Translated by Donald F. Brown, Ph.D. With an introduction by Isaiah Bowman, President of the Johns Hopkins University, Baltimore. Cloth. Pp. 130. The Johns Hopkins Press, Homewood, Baltimore 18, Maryland; Oxford University Press, Amen House, Warwick Sq., London, E.C. 4, 1948.

Now that the airplanes take people to high altitudes, the value of the basic studies made by Monge and his associates in the Institute of Andean Biology is tremendously enhanced. The monograph is presented in good literary style, is well documented and will be fascinating to all who have seen at first hand the problem that this book considers.

**Crime and the Mind: An Outline of Psychiatric Criminology.** By Walter Bromberg, M.D., Senior Psychiatrist, Bellevue Psychiatric Hospital, New York. Cloth. Price, $4.50. Pp. 219. J. B. Lippincott Co., 227-231 S. 6th St., Philadelphia 5, 1948.

This book is the outcome of a seminar on psychiatric criminology at New York University. The case material is derived from New York courts and agencies of the Navy. The author has had complete cooperation in developing the material. It is submitted in two parts—first, the legal and social environment of the criminal and, second, the individual criminal. The book is designed for the trained workers in the field rather than for a popular audience. The case material is not extraordinary but of the type found all too frequently in psychiatric practice. Included among other important cases is that of Irwin, a brilliant young man who became schizophrenic and murdered several persons. It does not appear that modern mental hygiene could have done much to prevent or cure in the case of Irwin, but earlier detection and recognition of the possibilities might have avoided the ultimate catastrophe. The whole subject is now so great that it constitutes one of those specialties within a specialty that make modern medical education so difficult.

**The Psychoanalytic Reader: An Anthology of Essential Papers with Critical Introductions.** Edited by Robert Fliess, M.D. Volume I. Cloth. Price, $7.50. Pp. 392. International Universities Press, Inc., 227 W. 13th St., New York 11, 1948.

Here is a collection of papers in the field of psychoanalysis beginning with early essays in Vienna as far back as 1909 and others collected from the authoritative publications in the field since that time. Psychoanalysis is just about fifty years old. As science goes, that is exceedingly young. Like many other works in the field concerned, this one requires an almost completely unquestioning acceptance of all of the basic freudian doctrines. In no other field of true science is such unquestioning acceptance demanded.

**Cornell Conferences on Therapy. Volume III.** Edited by Harry Gold, M.D., and others. Cloth. Price, $3.50. Pp. 337. The Macmillan Company, 60 Fifth Ave., New York 11, 1948.

Maintaining the high standards of the previous volumes in this series, the present book will be a welcome addition to the library of the practicing physician. Among the topics considered by the authorities contributing to these conferences are the uses of streptomycin, uses of protein hydrolysates, treatment of pneumonia, treatment of hepatic insufficiency and management of pain due to muscle spasm. These subjects are ones of interest to almost all general practitioners. In addition, some excellent advice is presented on the rational use of cathartic agents.

The first chapter on "The Dose of a Drug" contains some controversial points in that the single dose method of digitalization is used as an illustration. If this is overlooked, many of the statements regarding drug dosage are excellent.

This volume has practical value for the physician, since it deals with commonly encountered clinical problems in therapy and discusses the rationale for the therapeutic measures recommended.

**Sex Habits of American Men: A Symposium on the Kinsey Report.** Edited by Albert Deutsch. Cloth. Price, $3. Pp. 244. Prentice-Hall, Inc., 70 Fifth Ave., New York 11, 1948.

The publication of the Kinsey report aroused a flood of essays and comments which approached the problem from many different points of view. The collection of essays included in this book is better than most because of the qualifications of the contributors. The work is certainly not one for the average reader, who is likely to come away from its reading more confused than if he had limited himself to Kinsey's original book. As might be expected, the Protestant, Catholic and Jewish points of view vary, and one wonders why a book of the type of the Kinsey book should be submitted to that type of study. The criticisms in the various chapters take the colors of the well established attitudes of the writers. If the reader has previously approached the subject he obviously colors what he reads by his own attitudes. If this seems confusing, it is.

# Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

## TREATMENT OF TICK BITE

*To the Editor:*—About the middle of May 1948 a 4 year old boy was bitten on the top of the head by a tick which presumably had come from his pet dog. Some fever developed and swollen masses behind the ears. The day following the bite the parents left for Oklahoma, and while there called in a physician who found that the boy had a high grade fever. He was given four daily injections of penicillin; the amount of each dose is not known. On his return from Oklahoma he was brought to me; this was about two weeks after the original injury. The patient then seemed to feel well, and the mother reported that she had been unable to discover any elevation of temperature. Several small spongy masses in the back of the neck and the scalp were not tender, but were soft, and presumably were the postauricular lymph nodes. He was placed on small doses of sulfadiazine for two or three days and was not seen until about six weeks later. At this time the bite on the top of the head was practically healed but had still a small crust present. The lump behind the left ear was inflamed and showed indications of a small amount of fluid beneath the skin. Presumably this cleared up rather promptly, since he was not seen again until September 10, when he came in with a flare-up of an old impetigo around the mouth and on the chin. This cleared up promptly under appropriate treatment, but on September 17 he came in with cellulitis of the throat, which went on to abscess formation and was lanced and drained four days later. This healed without further complications. The child returned this morning with a small pustule behind the left ear overlying the mastoid bone, where he previously had swelling which was secondary to the tick bite. This has a small crust on it and appears likely to drain promptly and without further complications, since there is no inflammation surrounding it. The site of the tick bite on top of the head is still visible, and the small round scar appears to be entirely healed. Are recurrent episodes of this sort common after tick bites?

Ray S. Wycoff, M.D., Lexington, Neb.

[This inquiry was referred to two authorities, whose respective replies follow.—*Editor.*]

ANSWER.—Probably the tick involved in this case was the American dog tick, Dermacentor variabilis, since that is the species most commonly found in that portion of Nebraska. This tick is the principal transmitter of Rocky Mountain spotted fever in the Central and Eastern parts of the country and it has also been involved in the transmission of tularemia and in the causation of tick paralysis. Obviously neither Rocky Mountain spotted fever nor tick paralysis was involved in the present case, and it is doubtful whether it was tularemia. It is difficult to explain the persistent and recurrent sequelae. Secondary infection from tick bite is not unusual, and frequently itching and soreness at the point of attack persist for weeks or even months after the tick has been removed. This is particularly true of species of ticks having long mouth parts, such as the "Lone Star" tick. It is less frequent when the American dog tick is involved. The persistence and recurrence of infection in this case suggest that some organism was introduced by the tick at the time of the bite. To prevent infections from tick bites, some have suggested the application of a cauterizing agent at the exact site of the bite, particularly if this treatment can be given immediately after the tick is removed. The tick should be removed as soon as possible to avoid both infection by Rocky Mountain spotted fever and possible tick paralysis. This also reduces the chances of the persistent annoying effects of the bite, which appear to be associated with the introduction of saliva or other secretions of ticks.

ANSWER.—The early symptoms and the history of a tick bite suggest a mild case of ulceroglandular tularemia. If so, the organism probably is no longer present. The agglutination test, if positive in result, would tend to confirm a diagnosis of tularemia. Recurrence of inflammatory lesions of tularemia is not expected after apparent cure.

The subsequent impetigo followed by cellulitis of the throat and an abscess under the chin may have been caused by ordinary pyogenic bacteria. Cultural examination of material from an active lesion would be helpful in determining the organism which is active at present. Adequate treatment with a suitable sulfonamide compound or antibiotic probably would hasten healing and prevent recurrence.

Excellent results in the treatment of ulceroglandular and other forms of tularemia have been reported recently by the following observers: Bost, Percefull and Leming (J. A. M. A. **137**:352 [May 22] 1948); Foshay (*J. Indiana M. A.* **41**:207 [Feb.] 1948; abstracted J. A. M. A. **137**:1158 [July 24] 1948); Morgan (*Ann. Int. Med.* **27**:487 [Oct.] 1947; abstracted J. A. M. A. **136**:350 [Jan. 31] 1948); Johnson, Wilkinson and Figueras (*Am. J. M. Sc.* **214**:645, 1947); Berson and Harwell (*Am. J. M. Sc.* **215**:243 [March] 1948; abstracted J. A. M. A. **137**:1622 [Aug. 28] 1948), and Lesser and Miller (*New England J. Med.* **238**:554, 1948).

Berson and Harwell observed that streptomycin therapy of tularemia appears to have little effect when administered after the twelfth day of illness. Good but less rapid improvement was attributed by Curtis and Park (J. A. M. A. **113**:294 [July 22] 1939), to sulfanilamide and to quinacrine by Ecke and Ecke (abstracted J. A. M. A. **138**:775 [Nov. 6] 1948).

## CHRONIC MONILIASIS

*To the Editor:*—What is the treatment for chronic recurrent oral moniliasis?

C. L. Concklin, M.D., Corpus Christi, Texas.

ANSWER.—Specific therapy for moniliasis is not known. Human infection by this fungus is usually considered to occur in locus minoris resistentiae. It should therefore be possible to use a routine which will clear the mouth infection (thrush) and prevent its recurrence. It should be ascertained that the infection is strictly oral and that the subject is not diabetic. It is unfortunate that the extent of infection, the general condition and the previously used therapy are not mentioned. Local sites, including gingival crevices and poorly fitting dentures, should be cared for. Foci elsewhere on the body (skin, vagina, under the nails) should be cleared to prevent reinfection. The tongue may be scraped to rid the surface of ancient filiform papillae.

Some authorities feel that the predisposing cause is a vitamin B deficiency. Injections of a B complex concentrate, followed by the use of oral doses and attention to the diet, are worth while. Simple local measures are usually enough to clear the tongue lesions, and continued use should prevent recurrence. D. T. Smith has advised a bland alkaline mouth wash (10 per cent sodium bicarbonate) several times a day, or a wash of 1 to 10,000 gentian violet. Acriviolet® (containing acriflavine, crystal violet and methyl violet 2B) and ferric chloride are also effective. McKee and Cipollaro suggest applying 2 per cent aqueous gentian violet once a day. Roentgenotherapy may be used for severe unresponsive lesions. An autogenous rabbit serum vaccine has been reported to clear cases of resistant disease in which results of skin tests are positive, a daily subcutaneous hyposensitizing technic being used.

## NITROGEN MUSTARD IN CANCER

*To the Editor:*—What is the therapeutic effect of nitrogen mustard on highly cellular carcinoma or lymphoblastoma?

J. S. Collins, M.D., Wabasha, Minn.

ANSWER.—The nitrogen mustards have been found most useful in the palliative treatment of malignant lymphomas. Such treatment has effected temporary remissions in cases of Hodgkin's disease more consistently than in cases of the lymphosarcoma group. Results in the treatment of metastatic carcinoma have been uniformly disappointing. The effects observed are, generally speaking, similar to those following irradiation therapy but have been less consistently favorable and the resultant remissions of somewhat shorter duration.

While great reduction in size of a neoplastically diseased lymph node following nitrogen mustard therapy might be considered evidence favoring a diagnosis of malignant lymphoma rather than metastatic carcinoma, biopsy study would still be necessary for positive diagnosis.

## HEMATURIA OF UNKNOWN ORIGIN

*To the Editor:*—A male patient's urine repeatedly shows 2 to 3 red cells per high power field. Dr. A. states that the urine should be checked every month and, if there is not an increase in number of cells, this finding can be disregarded. Dr. B. states that after two or three samples of urine have consistently shown this finding the patient should be studied to determine the source of the cells, cystoscopy and pyelography being used if necessary. Which is correct?

M.D., Connecticut.

ANSWER.—The number of red blood cells found in the sediment of centrifuged normal urine varies between individuals and with the concentration of the sediment; however, 2 or 3 cells per high power field is abnormal and should be explained. The diagnosis of hematuria of unknown origin should be made by exclusion and accepted with reluctance. The three glass urine test, collecting urine at the start, during and at the end of urination would be useful, but cystoscopy, ureteral catheterization and pyelography are certainly indicated in order to ascertain the source of the hematuria.

### ORAL LESIONS AFTER HYSTERECTOMY

*To the Editor:*—What lesions are found in the mouth after hysterectomy? The buccal mucous membranes of a patient's mouth have blisters and white fibrous lines of scarred tissue at the center of the lesion extending posteriorly. Her chief complaint is that the saliva feels thick and ropy. This condition has not responded to hormonal, vitamin or liver therapy. What is the diagnosis and treatment? M.D., New York.

ANSWER.—Oral lesions directly due to simple hysterectomy are not known.

Indirect results might follow anesthesia, an associated oophorectomy, the presence of an infection, dehydration or an autonomic imbalance. The cause could be assessed better if data on the operation, general condition and age were given.

The best explanation would seem to be trauma to the buccal surface, on a line of the dental occlusion, due to the procedures of anesthesia, plus oligosialia.

A return to good general condition and hydration should clear both conditions, but if it does not it has been recommended that a few days' trial of neostigmine bromide, ½ tablet (7.5 mg.) by mouth after each meal, will result in profuse salivary secretion and clearance of the oral lesions. Omit drugs which decrease secretions (belladonna, etc.), and use a soothing dilute mouth wash.

### MÉNIÈRE'S SYNDROME

*To the Editor:*—A married, childless, 56 year old white American bank teller has had slight dizziness for the past two years, lasting a few moments at a time to full blown attacks of dizziness so bad that he would fall to the ground unless supported. Intense pallor, cold sweat, nausea and vomiting occur with these attacks. After a few hours of bed rest he improves and is able to work though it takes about two days to recover completely. About two years ago the patient's first attack came on so suddenly that he was unprepared and fell to the ground. Later when he got used to the attacks he could hold himself up by hanging on to some support. At about the same time that these attacks began he discovered that he was totally deaf in the left ear. At times the dizziness strikes him so that objects and walls of the room all roll about in a hopeless jumble; he staggers about in an incoordinated manner though his legs do not buckle. He falls because of incoordination and lack of balance. His physical examination does not reveal any abnormality. He has worn bifocals since age 16. His blood pressure is 130 systolic and 80 diastolic. Roentgenograms of the skull do not reveal abnormality. Is Ménière's syndrome the logical diagnosis? What further tests should be performed and what is the treatment? M.D., New York.

ANSWER.—The diagnosis of Ménière's syndrome in your case is not only a logical one but an accurate one. Your case is associated with pseudoapoplectic or pseudoepileptic types of seizure together with deafness in one ear. Has your patient any tinnitus aurium? If he is totally deaf in the involved ear there will not be noises or tinnitus. Is the tuning lateralized on the skull? In order to clinch the diagnosis it is suggested that you have a skiagraphic study of the internal auditory meatuses made. A cerebellopontine angle tumor may produce these symptoms. The most practical and efficient therapy in your case is the giving of phenobarbital in doses of 1½ grains (0.1 Gm.) two, three or four times daily. You must tell your patient to be careful about moving his head, because such movements will invariably result in an attack of labyrinthine vertigo. This is especially true in the morning when the afflicted person wakes up and jumps out of bed. It is entirely possible and practical to do this, and your patient will be everlastingly grateful to you. The salt-free diet and other forms of dietary regimen have been unsuccessful. You could have your patient undergo an intracranial section of the vestibular or cochlear nerve on the left side. This, however, is not to be done if you can stop his vertiginous attacks with phenobarbital. Certainly if he is not troubled with tinnitus such an operation is not indicated. He must take his medicine constantly for many years.

### HUMAN PARTHENOGENESIS

*To the Editor:*—Is there any authentic evidence aside from religious records, excluding of course the possibility of accidental cell union in both tubs or female intimacy, that both male and female cells have been found in a person, as an aberrant type of human parthenogenesis or uterine or extrauterine fetal development, teratoma in type? Has there been evidence of a fetus developing from such embryonic cells and if so what stage of fetal development has been reached?
Clarence W. Lieb, M.D., Rancho Santa Fe, Calif.

ANSWER.—"Fatherless" rabbits have been produced by obtaining the unfertilized ova from a female rabbit, stimulating the initiation of development by glass needle or other means and then, when development has begun, transplanting them into the tubes of another virgin rabbit.

In the case of the human ovum, unfertilized ova have been obtained from the tubes of women who have been operated on for fibroids or other pelvic conditions. They have been placed in culture mediums and development has been started, but up to the present experiments have not been recorded in which these parthenogenetically initiated ova have been transplanted.

Since the possibility of this type of development has been established, at least in its beginning, it is a fair assumption that such growths as teratomas which appear in the ovaries bear relation to the hostess as offspring to mother. The other theory has been that there may be a totally potent cell segregated early so that the relationship is as of twins.

### NEGATIVE T WAVE IN LEFT UNIPOLAR LEAD

*To the Editor:*—Would you please discuss the meaning of a negative T wave in the left unipolar arm lead in the electrocardiogram? If it is at times normal, how would you differentiate a normal negative T wave from an abnormal one? If a negative T wave in an $aV_L$ lead is always abnormal, then $T_3$ greater than $T_1$ must be considered abnormal. M.D., Ohio.

ANSWER.—The deflection in the unipolar left arm lead at a given instant is equal to the simultaneous deflection in lead I minus the deflection in lead III. Inversion of the T in this lead means, therefore, that the T wave in lead III is larger than the T wave in lead I. This situation occurs normally when the heart is in the vertical position, in which the potential variations of the two arms are similar and like those at the base of the heart. When the ventricular deflections in the two unipolar arm leads are alike, inversion of the T wave in the left arm lead has no significance. In this case the chief QRS deflection in both of these leads is downward. Inversion of the T wave in the unipolar left arm lead when the chief QRS deflection is a relatively large R wave is usually, if not always, abnormal. If such findings are accompanied by a Q wave which is more than one fourth the size of the R wave which follows it, precordial leads should be taken to rule out anterior infarction. In rare cases of this kind, there is a high lateral infarct, and it is necessary to take precordial leads from points between the standard ones and the left shoulder in order to obtain tracings that are diagnostic of infarction. Such tracings are significant only when they show changes more characteristic of infarction than those in the usual precordial leads and also more characteristic than those in the left arm lead.

### PAROXYSMAL LABYRINTHINE VERTIGO

*To the Editor:*—A number of elderly women and an occasional elderly man complain persistently of "disturbing dizziness" or "noises in the head" or "headache" which moves from place to place at intervals during the day over a protracted period. Most of these patients give evidence of arteriosclerotic changes elsewhere in the body, and many of them have hypertensive cardiovascular disease. Is there a satisfactory therapeutic agent for these patients? If so, could you indicate the physiologic basis of action as well as the name of such agents. Hypotensive agents such as mannitol hexanitrate and veratrum viride have been unsuccessful. Tincture of belladonna, amphetamine sulfate, phenobarbital and other sedatives or stimulants have failed to give satisfactory results. I have not tried testosterone or vitamin E, both of which have been said to have vasodilating actions. M.D., Massachusetts.

ANSWER.—Your patients are afflicted with paroxysmal labyrinthine vertigo or pseudo-Ménière's syndrome. This is true only if your patients fail to show objective evidence of brain tumors or other lesions. From your description they have a sclerotic lesion in the vestibular and cochlear systems. The only drug that has proved valuable in our cases is phenobarbital. It must be given in proper doses. These are 1½ grains (0.1 Gm.) two to four times daily. Your patients may become drowsy, but this will be accepted in a more wholesome manner than the terrific attacks of vertigo. Other forms of treatment have not helped. Advise them to be extremely careful about moving their heads because such movements invariably start an attack. If the noises and headaches are severe (and phenobarbital will not relieve them), it is suggested that you think of advising your patients to have an intracranial section of the involved vestibular and cochlear nerves. If you can control the vertigo this operation should not be done.

### ENCEPHALITIS DUE TO MEASLES

*To the Editor:*—Is encephalitis rarer after modified measles than after unmodified measles? M.D., New York.

ANSWER.—Encephalitis is a rare complication of unmodified measles. Nervous symptoms occur in about 0.5 per cent of all cases of measles. Modified measles are naturally less frequent than unmodified measles and usually run a much milder course with fewer complications. References to the incidence of encephalitis following modified measles are not known.

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# BENIGN TUMORS OF THE BREAST

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There are, perhaps, few conditions which cause as much anxiety and worry to the patient as do tumors of the breast. The reasons are not simple or clear. The breast is, of course, the most superficially placed of all organs where cancer frequently occurs, but there are deep psychogenic reasons which make the thought of loss of the breast terrifying to the average woman.

Five years ago, in our personal practice, we operated on as many cancers of the breast as we did on benign lesions of the breast. For the past three years, our operative records show twice as many benign tumors as cancers. In addition, the number of breast conditions seen and not operated on now almost equals the number in which there was surgical intervention (table 1). We also noticed that the number of patients with breast conditions seemed to increase during and immediately after periods of publicity regarding cancer. Public education in cancer seems to focus on a lump in the breast.

From the physicians' point of view, the problem in dealing with tumors of the breast is accuracy in diagnosis. Leach and Robbins[1] found that 50 per cent of patients in their series with mammary tumors received "improper advice," and Haagensen[2] in a similar compilation found that 27 per cent had been given "wrong medical advice."

## MATERIAL AND HISTOLOGIC TYPES OF BENIGN TUMORS

A large part of the problem in cancer of the breast is the separation of various benign tumors from the malignant ones. We have reviewed the last 100 consecutive cases of benign tumors of the breast seen by us, our interest being chiefly in the diagnostic problems and indications for treatment. All 100 patients had microscopically proved diagnoses.

In table 2 are listed the histologic types of conditions encountered. Half (50) of the patients had chronic cystic mastitis; 26 had adenofibromas and 7 had lipomas. There were 12 papillomas, 6 intracystic and 6 in the lacteal ducts. There were only 3 abscesses, but in 2 of these draining sinuses persisted until they were completely excised. Only 1 patient was observed with fat necrosis, which had followed an injury. In 1 patient a well localized tumor was removed from the tail of the breast and found to be aberrant mammary tissue. There were 2 male patients; one had a lipoma and the other an abscess.

During 1947, 26 patients with benign tumors underwent surgical intervention. At the same time 22 patients were observed with conditions of the breast that for various reasons did not require operative procedures (table 1). Nine of these complained of pain only, and *nothing was discernible on examination.* Four patients had had previous surgical operations, and the microscopic diagnoses had been chronic cystic mastitis. Although a diffuse nodularity was felt in the breast of each patient, another operation was not deemed necessary. Five patients presented solitary mammary cysts, which were aspirated and then disappeared completely. Of the 4 remaining patients, in 1 a nodularity which had been felt on her first visit disappeared within five months. In another, a small mass near the areola papillaris persisted. The remaining 2 patients failed to return. The presumptive diagnoses were chronic cystic mastitis.

## CHRONIC CYSTIC MASTITIS

In 33 of the 50 patients with chronic cystic mastitis (table 2) the disease was most pronounced in the upper outer quadrant of the breast. Nine of the 50 had bilateral disease on their first visit, all but 2 of these in the upper outer quadrant of each breast.

This disease by its very nature pathologically is of long duration (except for the isolated acute cases), but due to an enlightened public its clinical course as we now see it is becoming much shorter. Nineteen of the foregoing patients sought medical advice within the first two weeks after they noticed symptoms, 27 within the first month and 8 more within three months after the onset of symptoms. In only 5 were symptoms present longer than one year without their having sought medical aid (1 of these for ten and 1 for sixteen years). It is evident that we no longer have the comforting words, "my breast has been bothering me for years," as an aid in diagnosis.

Twenty-nine patients were between the ages of 40 and 49, and 13 were between the ages of 30 and 39. As these figures illustrate, chronic cystic mastitis is most frequently observed in women at or just before the menopause, when the endocrine balance is beginning to readjust itself to a new level. Of the 29 patients between the ages of 40 and 49 who had this disease, 10 complained of menopausal symptoms and another 5 had other gynecologic disorders; fibromyomas of the uterus, menorrhagia, scanty menses and cervical polyps.

Pain was present in half (26) of the patients. In 11 it was the initial symptom, and in 15 it developed as the condition progressed. Pain is not a common

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From the Surgical Department, Harper Hospital.

Dr. Pollack is now Director of Tumor Service, United States Marine Hospital, San Francisco.

[1] Leach, J. E., and Robbins, G. F.: Delay in the Diagnosis of Cancer, J. A. M. A. **135**: 5-8 (Sept. 6) 1947.

[2] Haagensen, C. D.: Carcinoma of the Breast, J. A. M. A. **138**: *195-205* (Sept. 18); *279-292* (Sept. 25) *1948.*

symptom of mammary cancer (about 10 per cent of cancer patients have pain), and on the basis of this small series many highly excited and distracted patients, convinced because of pain that they have cancer, can be reassured.

In 33 patients the first sign of chronic cystic mastitis was the presence of a lump in the breast. On examination a diffuse nodularity, which was slightly tender, could be felt in half of the patients. Except for the solitary cysts no single tumor could be palpated, but instead there was a poorly outlined, thickened, irregular mass, which in some patients appeared to be composed of multiple small cysts and large, thickened cordlike lobules. On palpation these tumefactions seem to be part of the breast tissue itself and do not move freely. In 3 of our cases there was retraction of the overlying skin with slight pulling of the nipple (fig. 1). Therefore, retraction of the skin is not an invariable sign of cancer.

Table 1.—*Number of Patients Seen During Past Five Years with Benign and Malignant Tumors of the Breast*

| Year | 1943 | 1944 | 1945 | 1946 | 1947 | Total |
|---|---|---|---|---|---|---|
| Malignant | 8 | 18 | 7 | 10 | 11 | 54 |
| Benign | 8 | 20 | 26 | 20 | 26 | 100 |
| Presumably benign, unoperated (one year only) | .. | .. | .. | .. | 22 | 22 |

## CHRONIC CYSTIC MASTITIS AND CANCER

The relationship of chronic cystic mastitis to cancer has varied widely among different investigators. Ackerman and del Regato[3] stated that it is "directly proportional to the liberality of the pathologist in diagnosing such a lesion." Foote and Stewart[4] similarly have stated that "the concomitant occurrence of cancer in so-called chronic cystic mastitis will vary statistically according to the selection of lesions."

By and large, pathologists have agreed that the microscopic changes of small cyst formation and proliferation of the epithelium occur in a large percentage of cases of cancer of the breast. MacCarty and Mensing[5] found 100 per cent of 967 carcinomas of the breast associated with chronic cystic mastitis. Ewing[6] reported at least 50 per cent; Semb,[7] 80 per cent. Cheatle[8] repeatedly emphasized the association of cancer and chronic changes in the breast.

Table 2.—*Histologic Types of 100 Consecutive Benign Tumors of the Breast*

| | |
|---|---|
| Chronic cystic mastitis | 50 |
| Unilateral | 41 |
| Bilateral | 9 |
| Papillomas of the duct | 6 |
| Intracystic papillomas | 6 |
| Adenofibromas | 26 |
| Lipomas | 7 |
| Abscesses | 3 |
| Fat necrosis | 1 |
| Extramammary tissue | 1 |
| Total | 100 |

Pathologists have differed with regard to the direct etiologic relationship of these changes to carcinoma. Ewing[6] and Warren[9] both used the term precancerous and thought that epithelial hyperplasia preceded cancer in enough instances to be significant. However, Foote and Stewart,[4] after an exceedingly careful and critical analysis of 200 cancerous and 300 noncancerous breasts, found that the changes described in chronic cystic mastitis are just as common in noncancerous as in cancerous breasts. They further state that it has not been proved that these changes are the focal starting points for cancers of the breast in any sufficient number to be significant.

The confusion exists in the criteria which different pathologists use to diagnose chronic cystic mastitis. In Foote and Stewart's material 59 per cent of the patients with cancer of the breast exhibited one of five cystic and proliferative lesions; cysts, papillomatosis of the duct, blunt duct adenosis, sclerosing adenosis or apocrine epithelium. Sixty-five per cent of 200 noncancerous breasts likewise contained one of these five features. When two or three of the foregoing features were tabulated in the two groups, the difference between the cancerous and the noncancerous breasts was not outstanding, and the etiologic relationship of chronic cystic mastitis to cancer was not proved.

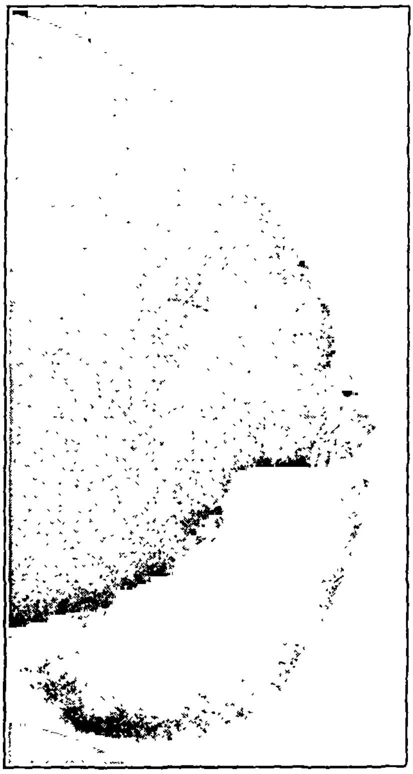

Fig. 1.—Dimpling of skin caused by small cyst close to the surface of breast. The scar lateral from the nipple represents local excision of area with chronic cystic mastitis on March 20, 1947. One month later the small thickened area (marked with a cross) was noticed 1 inch above the nipple. A small amount of yellowish fluid was obtained on aspiration. The indurated area persisted and therefore a second local excision was done May 10, 1947. A small cyst with smooth lining was removed.

As the foregoing statements would indicate, there has been a steady tendency to regard these lesions as not necessarily leading to cancer. Starting with Bloodgood,[10] then White,[11] Lewis and Geschickter[12] and, more recently, Foote and Stewart, to mention a few authors, the realization has grown that present information is not conclusive enough to state with exactness the precancerous nature of this lesion. Nevertheless, in clinical follow-up studies a certain small but significant relationship must be admitted to exist. Many series have shown this. Warren[9] in a careful and extensive clinical study followed 1,206 patients with chronic cystic mastitis. Cancer developed in 42, or about three times the incidence expected in the normal population. More concretely, between the ages of 30 and 49, women with chronic mastitis have 11.7 times greater incidence of cancer. After 50 years of age the incidence is 2.5 times greater. It is still believed, therefore, despite the lack of anatomic evidence, that the proliferative lesions of chronic cystic mastitis predispose toward a slightly higher incidence of cancer.

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[3] Ackerman, L. V., and del Regato, J. A.: Cancer: Diagnosis, Treatment and Prognosis, St. Louis, C. V. Mosby Company, 1947, p. 928.

[4] Foote, F., and Stewart, F. W.: Comparative Studies of Cancerous Versus Non-Cancerous Breasts, Am. Surg. **121:** 6-53 (Jan.) 1945.

[5] MacCarty, W. C., and Mensing, E. H.: The Relationship Between Chronic Mastitis and Carcinoma of the Breast, in Mellish, M. H.: Collected Papers of the Mayo Clinic, Philadelphia, W. B. Saunders Company, 1915, vol. 7, p. 918.

[6] Ewing, J. E.: Neoplastic Disease, ed. 3, Philadelphia, W. B. Saunders Company, 1928, p. 532-533.

[7] Semb, C.: Fibro-Adenomatosis Cystica Mammae, Acta path. et microbiol. Scandinav. (supp.) **5:** 62-70, 1928; Pathologico-Anatomical and Clinical Investigations of Fibro-Adenomatosis Cystica Mammae and Its Relation to Other Pathological Conditions in Mamma, Especially Cancer, Acta chir. Scandinav. (supp. 10) **64:** 1-484, 1928.

[8] Cheatle, G. L., and Ludfor, R. J.: Some Aspects of Radium Treatment of Carcinoma, with Cystological Reports of Some Cases, Practitioner **125:** 496-507 (Oct.) 1930. Cheatle, G. L.: Lecture on Treatment of Mammary Carcinoma by Radiation, Brit. M. J. **1:** 807-811 (May 3) 1930; Precancerous Conditions of the Breast, Cancer Rev. **5:** 81 (Feb.) 1930. Cheatle, G. L., and Cutler, M.: Tumours of the Breast, London, Edward Arnold & Co., 1931.

[9] Warren, S.: The Relation of "Chronic Mastitis" to Carcinoma of the Breast, Surg., Gynec. & Obst. **71:** 257-273 (Sept.) 1940; Prognosis of Benign Lesions of Female Breast, Surgery **19:** 32-39 (Jan.) 1946.

Clinically, one may describe three broad groups of patients with this disease. One group includes those patients with blue dome cysts. Bloodgood[10] was the first to state categorically that these had no relationship to cancer. The cysts occur in the age group of the menopause, often in women with soft full breasts, and arise suddenly with some associated pain. They are usually discrete, single and tense.

During the time of this study we have aspirated nine cysts (not included in table 2), most of them during the past year. As a rule 10 to 20 cc. of turbid yellow or greenish fluid, often under pressure, was obtained. Usually this was all the treatment that was necessary, and after two or three weeks the breast tissue felt smooth and normal at the site of the aspiration. In 1 case the first aspiration was unsuccessful but the second, performed under anesthesia and with the patient prepared for local excision, brought forth 30 cc. of greenish turbid fluid under tension from two separate cysts. Nothing further was done, and the breast felt normal in a few weeks. Two cysts refilled within two weeks, and therefore local excision was immediately performed. Two other patients had small localized areas of residual induration which remained for three weeks after aspiration, and excision was therefore performed.[13]

We consider that aspiration of a simple cyst (fig. 2) is a safe procedure, provided the patients are carefully selected and both physician and patient are prepared for excision of any residual localized or indurated mass that does not subside after a few weeks. In 2 patients the attempt at aspiration was unsuccessful. Both were advised to return for a recheck and probable excision but did not do so.

Another group which is sometimes separated includes young women who complain merely of pain in the breast and on examination exhibit tender, firm, diffusely thickened areas most commonly found in the upper outer quadrant. These have been called painful breasts, mastodynia or mazoplasia; all terms which indicate a mild condition. Reassurance of the patient is all that is necessary, and further treatment is not required. During the past year, of the 22 patients with breast complaints who did not come to operation, 9 complained only of pain and belonged in this group.

The third and largest group, and the one wherein so much confusion exists, is probably a more exaggerated or later form of the mastodynias. This condition is called variously Schimmelbusch's disease, benign parenchymatous hyperplasia, adenosis, adenocystic disease and a variety of other names. These women are often childless, are in their late thirties or early forties, have irregular menses and are nervous and underweight. A frequent association with thyroid and uterine tumors may be found. They often have small, dense, saucer-edged breasts with multiple nodules on palpation. Microscopically, the mammary tissue is characterized by minute cysts of various sizes, usually smaller than 0.5 cm. and with varying epithelial proliferation. Most of the local excisions that were performed were on patients whose disease fell into this group.

FOLLOW-UP

Thirty-five of the 50 patients on whom we performed local excision for chronic cystic mastitis were followed for six months or more. Nine still complained of pain and nodularity in the breast, and in 3 of these definite cystic areas were felt at varying intervals.

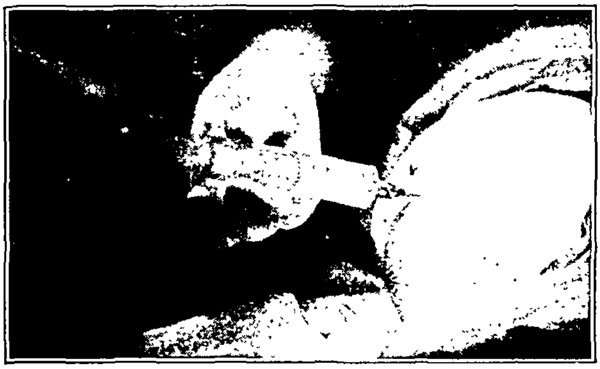

Fig. 2.—Aspiration of a blue dome cyst.

Chronic cystic mastitis is a disease of all the mammary tissue, and it is obvious that local excision is not curative. Surgery is performed primarily to rule out cancer. Statistical evidence which shows an increased (3 to 5 per cent) liability to form cancer in these patients is a secondary consideration.

PAPILLOMAS OF THE DUCT

There were 6 patients in whom a serosanguineous discharge was caused by a papilloma in the lacteal ducts. Bleeding from the nipple was present for as short a time as one week and as long as three years. Bleeding may start from a slight trauma or spontaneously, and it may continue daily with the passage of a few drops or intermittently every one or two months. In some this symptom may become more persistent at the time of the menopause. The youngest patient was 36, the oldest 52.

In all 6 cases local excision of the papilloma of the duct with a small margin of surrounding mammary tissue was performed. The papillomas were microscopically benign and ranged from 2 to 10 mm. in diameter. Mastectomy is not necessary for this condition. Once the cause of bleeding is identified as a papilloma (fig. 3), its complete excision carried out and its benign character verified, the risk of subsequent formation of cancer in the same breast does not warrant radical amputation (Saltzstein and Pollack[14]).

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[10] Bloodgood, J. C.: Pathology of Chronic Cystic Mastitis of Female Breast, with Special Consideration of Blue-Domed Cyst, Arch. Surg. 3: 445 (Nov.) 1921; The Blue-Domed Cyst in Chronic Cystic Mastitis, J. A. M. A. 93: 1056-1059 (Oct. 5) 1929.

[11] White, W. C.: Cancer of the Breast, New York, Harper & Brothers, 1930, p. 40.

[12] Lewis, D., and Geschickter, C. F.: Relation of Chronic Cystic Mastitis to Carcinoma of Breast, Surg., Gynec. & Obst. 66: 300-307 (Feb.) 1938.

[13] It sometimes takes six to eight weeks for the breast to feel normal again.

Six intracystic papillomas (within small cysts in the parenchyma of the breast) were found in the pathologic examination of specimens removed from those patients with chronic cystic mastitis. These are not included in the 50 cases of chronic cystic mastitis already described. It emphasizes the fact brought out by Foote and Stewart[4] that papilloma formation is not uncommon in this condition. It is one of the features of the disease. There were no distinguishing clinical signs or symptoms in this small group of 6 patients to set them apart from the remainder of the patients with chronic cystic mastitis. None had bloody discharge from the nipple, and all sought medical aid because of a mass in the breast of from one week to two years' duration. In 3 the mass was tender. All were treated by local excision of the localized area of chronic cystic mastitis.

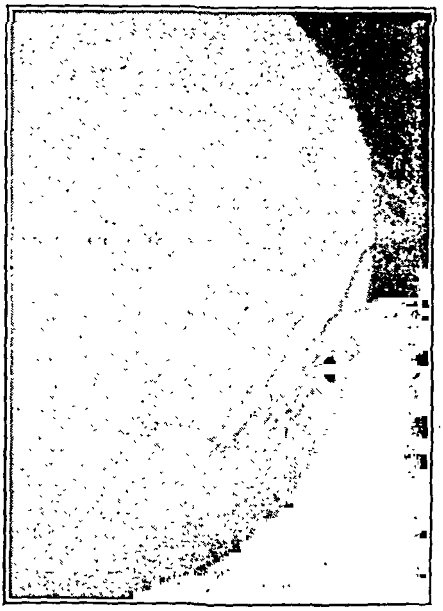

Fig. 3.—Roentgenogram of the breast following injection of lacteal duct with methiadol sodium (skiodan®). A large papilloma is seen filling the duct, starting 1 cm. from the orifice of the duct.

ADENOFIBROMAS

There were 26 adenofibromas in the 100 cases. This tumor has several distinctive characteristics; hence, diagnostic difficulties are considerably less than with chronic cystic mastitis.

As with other types of mammary tumors, the upper outer quadrant was most commonly the site. Fourteen adenofibromas were in this region. In 22 of the 26, the first symptom was merely the presence of a lump in the breast. In only 4 instances was any pain associated with the tumor. Twenty-one tumors were described as freely movable, well outlined and firm without tenderness. The remaining 5 were thought to be poor in outline, diffuse and with some softness. Only 2 of the 5 were tender.

Eleven patients consulted a physician within the first month and 7 more within the first six months. Two patients had had the tumor fifteen and thirty years, respectively, but had done nothing about it because, "it did not bother them." Both tumors were locally excised and revealed no evidence histologically of any change to a more anaplastic type of growth.

In 18 patients, or 72 per cent, the tumors occurred between the ages of 20 and 39; in 7 between the ages of 40 and 49; extreme ages were 20 and 48 years. None of the patients were pregnant and none past the menopause, although 8 per cent in Geschickter's series[15] were beyond the menopause and in 10 per cent the tumors were present before the first menses.

Eight patients had associated gynecologic complaints. Three had fibromyomas of the uterus, one of them having a thyroid adenoma as well. Three had menstrual irregularities and 2 were experiencing symptoms of the menopause. The relation of this tumor to periods of estrogen stimulation has been commented on by several authors.

Adenofibromas occur predominantly in women of the child-bearing period. The tumors are liable to rapid growth during pregnancy and also when they occur at the time of the menopause. This is reason enough for early local excision. In addition, malignant degeneration is not uncommon. Of 29 sarcomas of the breast collected by Geschickter,[15] 11 were thought to have formed from preexisting adenofibromas. Adair and Herrmann[16] collected 30 sarcomas and believed that 4 were from previous adenofibromas. Cystosarcoma phylloides (giant intracanalicular fibromyxoma, giant mammary myxoma) is an old term denoting a large, slowly growing, solitary tumor of the breast, previously considered to be benign. It is now commonly believed that these tumors also arise from preexisting adenofibromas and may become cancerous. In a recent review of 52 of these cases by one of us (R. S. P.),[17] 8 were found to be cancerous and the patients had a rapidly fatal course.

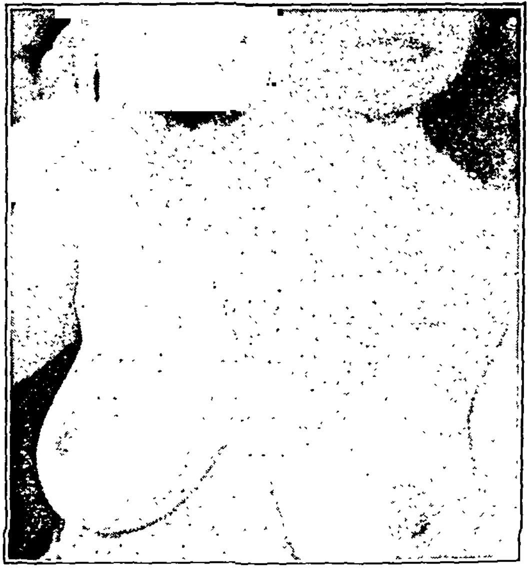

Fig. 4.—Accessory breast tissue.

MISCELLANEOUS TUMORS

Seven of the 100 patients had lipomas. These are completely innocent tumors, but their presence alone may cause much worry and anxiety. It may be difficult to be certain that they are only lipomas. The average

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[14] Saltzstein, H. C., and Pollack, R. S.: Localization and Treatment of Papillomas of the Breast, Cancer 1:625 (Nov.) 1948.

[15] Geschickter, C. F.: Diseases of the Breast, Philadelphia, J. B. Lippincott Company, 1945, p. 380.

[16] Adair, F. E., and Herrmann, J. B.: Sarcoma of Breast with Report of Thirty Cases, Surgery 19:55-73 (Jan.) 1946.

[17] Treves, N., and Pollack, R. S.: Cystosarcoma Phylloides with Special Emphasis on the Malignant Variant, to be published.

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age of the patients was 43 years, with extremes of 34 and 62. The tumors were present for as little as three months and as long as three years. Five were in the upper inner quadrant of the breast and 2 in the upper outer quadrant. Six were described as soft, superficial and apparently lying on top of the mammary tissue. They were unattached, freely movable and, with 2 exceptions, nontender. One was described as firm, tender and attached to the skin; it had followed a previous injury to the breast in that area. The average size was 3 to 4 cm. There was one man in this group. If gynecomastia is excluded, lipomas are the most commonly observed benign tumors in the male breast. Local excision was performed in each case. In one the tumor was recurrent, having been excised elsewhere three years previously.

Three patients had spontaneous abscesses; 1 was a man with a tense painful mass, of two weeks' duration, in the upper inner quadrant of the breast. Incision and drainage was all that was necessary. It resembled an abscess elsewhere in the body, and, although the etiologic basis was obscure, it may have arisen from the glands of the skin. The other 2 abscesses probably developed on the basis of chronic cystic mastitis. One patient never became pregnant, and in the other the abscess developed before pregnancy, so that pregnancy and lactation could be excluded in both cases. After spontaneous rupture, draining sinuses persisted for six months and two years, respectively. Both abscesses were painful and would discharge intermittently for a few days, then disappear, only to recur again in another week or two. There was a small induration beneath each. Complete local excision effected a cure in both cases.

There was 1 patient with fat necrosis. Recognition of this peculiar condition is important because it so frequently mimics carcinoma. The patient was 24 years of age and was accidentally struck in the breast four months previously by a companion's elbow. One week later she noticed a lump in the lower inner quadrant of the left breast. It was not tender and did not increase in size but seemed to become firmer. Examination disclosed a solid tumor, not freely movable and with a suggestion of slight induration. It was unattached to the overlying skin. Local excision and examination revealed fat necrosis with microscopic evidence of abscess formation.

Accessory mammary tissue in the extreme tail of the breast, near the axilla, may present another confusing picture. One patient had bilateral masses in the tail of each breast. The patient was 51 years of age and for one year had noticed slight soreness and tenderness in the extreme tail of each breast, where there were soft, bulky, slightly thickened, poorly outlined masses near the axilla, more pronounced on the left side (fig. 4). Local excision on the left was performed. Microscopic examination revealed normal aberrant breast tissue.

SUMMARY AND CONCLUSION

1. Great headway in public health education seems to have been made in patients with tumors of the breast. This increases the responsibility of the members of the medical profession toward making an accurate diagnosis of all mammary conditions, benign and malignant.

2. The relationship between chronic cystic mastitis, the most commonly observed condition in 100 consecutive cases of benign diseases of the breast, and cancer is still confused. The former is a disease which involves all of the mammary tissue and is characterized by many histologic features. Local excision, the treatment of choice, is not curative but is the only certain way to rule out the presence of cancer.

3. Adenofibromas occur predominantly during the child-bearing period. Accurate diagnosis in these patients is more readily obtained than with other tumors of the breast. Early local excision is important, due to the rapid increase in size during periods of estrogen stimulation and the possibility of malignant transformation.

4. Bleeding from the nipple is a cardinal symptom of papillomas of the duct. Accurate localization is necessary in treating these tumors. When this has been accomplished and the benign nature of the tumor has been verified, local excision is the only treatment necessary.

5. A somewhat heterogeneous group of tumors was found in the remainder of the 100 patients with benign conditions of the breast. These included lipomas, abscesses, fat necrosis and aberrant breast tissue. All of them were noncancerous but are of diagnostic importance and cause much worry and anxiety to the patient.

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# OPERATIVE VS. NONOPERATIVE PROCEDURES FOR UTERINE FIBROIDS

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Every week day for almost fifty years I have been seeing, examining and advising women who are sick or believe themselves to be sick. A large number are fear stricken and panicky. Some hide it because of pride, upbringing and convention; others show naked fear unashamed. Their fear is of invalidism, pain, tumor, cancer and death. They may have watched a sick member of their family fade away, listened to gruesome gossip from a neighbor and, to culminate it all, have been told tactlessly by their physician that they have a tumor in the breast, womb or ovary which requires immediate operation. The impression made by this or analogous combinations of events causes a fixation which may resist all attempts to convince them that the condition is harmless, nonmalignant, and does not require operation. Today, the widely publicized cancer campaigns, the insistence of the public itself on the routine making of vaginal spreads for cancer, the overzealous, inexperienced routineers who man many clinics and who fail to recognize the wide variations which nature still considers normal, who heedlessly and needlessly frighten patients, are rapidly increasing individual panic into a national stampede. Unchecked this movement will leave in its wake a wide swath of hopelessly neurotic persons, of disabled and unnecessarily mutilated women.

By far the most numerous "tumor" encountered in women is the fibroid, or more properly called fibromyoma of the uterus, a muscle growth, almost certainly produced by some excess or imbalance in the secretion of the female sex hormones.[1] In many ways fibroids of the uterus resemble adenoma of the prostate in the male. One striking difference, however, is that while cancer in adenoma of the prostate is frequent, malignancy in fibroids is exceptional.

The health, happiness and future morale of many a patient will rest on the tact, insight and kindliness with which the attending physician, most often the general practitioner, the "family physician," enlightens her about the presence of a fibroid of the uterus. If his knowledge and experience do not qualify him to give a decisive verdict, he should at least offer reassurance and request a qualified opinion from a specialist. Unless this precaution is observed, it makes future treatment difficult or impossible, unless it coincides with the first opinion voiced, which may well have been faulty. Selection of therapy, if such be needed, should be done only after consultation and discussion with a competent gynecologist.

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[1] Lipschutz, A.: Experimental Fibroids and the Antifibromatogenic Action of Steroid Hormones, J. A. M. A. **120:** 171 (Sept. 19) 1942.

A number of problems arise in each case, which must influence and determine the method of treatment to be pursued. One patient, whose pelvis is blocked with fibroids, wants children. Another, whose uterus contains two or three minute fundal growths, has been terrified without valid basis and told she must never become pregnant. A third is flooding alarmingly. In not a few instances, I have found that patients referred for treatment of fibroids have no fibroids, a retroflexed uterus appearing enlarged to the uninitiate, or a subinvoluted uterus is diagnosed as fibroidal, or ovarian growths or intraligamentous exudates are mistaken for myomas.

As I mentioned at the outset, I have been seeing, observing and treating fibroids for nearly half a century. At the beginning of my career, in the early 1900's, supravaginal hysterectomy was attended with such a considerable mortality rate (peritonitis, intestinal paresis, postoperative pneumonia, embolism) that operation was performed as a last resort.[2] Fifteen years later, roentgen therapy was hailed as a major boon, a substitute for operation, and was used too indiscriminately until its limitations were recognized.[3] Myomectomy presented undue hazards and was confined to the hands of a few. Today advancement in anesthesia, the advent of blood transfusion, preoperative preparation and postoperative care, the antibiotics, the Miller-Abbott tube, early ambulation and anticoagulant therapy have reduced both the mortality rate and morbidity to a minimum. In consequence, both myomectomy and supravaginal, as well as total, hysterectomy, are resorted to frequently, often indiscriminately and sometimes unnecessarily.[4]

TABLE 1.—*Incidence of Symptoms*

| Symptoms | No. of Cases |
|---|---|
| Excessive bleeding | 309 |
| Prolonged bleeding | 194 |
| Urinary symptoms | 121 |
| Pain | 190 |
| Enlarged abdomen | 46 |
| No symptoms | 56 |

In order that the problem be presented fairly, as well as on a factual basis, my office staff took a large random sample from my private patient files. Three thousand case histories as they appeared alphabetically have been examined; every case in which fibroids were found has been analyzed and utilized in the tables which follow. These unselected cases date between 1925 and the time of reporting. What do they teach us?

## MATERIAL

The 916 fibroid bearers (30.5 per cent of the 3,000 gynecologic patients) exceed the number of persons with fibroids in the general population because they represent a group presenting themselves for gynecologic examination. Seven hundred and thirty-one were referred by physicians (80 per cent), and, of these, 331 were referred with the diagnosis of "fibroids" (45.3 per cent). However, it is known that fibroids occur in 4 to 11 per cent of women according to the observations in large groups of women.[5] How many symptomless tumors of small and moderate size never are discovered is a matter of pure conjecture, but, even in a group in which the diagnosis had been made, more than 6 per cent were found symptomless and 25 per cent complained of noncharacteristic troubles, not ascribable to the tumors, such as backache and dysuria (frequency, burning, spasm), dysmenorrhea and dyspareunia, symptoms noted in a wide variety of conditions.

## OBSERVATIONS

*Symptoms.*—The most frequent and characteristic complaint in fibroid bearers was excessive bleeding (309); next came prolonged bleeding or spotting (194). Disturbance of urination (121) and pain (190) of all varieties and locations, usually lower abdominal, backache, right iliac or groin, were in no way characteristic. Rarely was the pain situated over the tumor except in inflammation, torsion of pedunculated growths or in aseptic necrosis (usually during pregnancy). Abdominal increase was noted in less than 5 per cent. In about 6 per cent no complaints whatever existed. Concomitant symptoms, such as dizziness, anemia, high or low blood pressure, digestive disturbances and psychosomatic manifestations of infinite variety, as well as anxieties ascribable to the current "cancerphobia," serve to present a confused picture. Pressure symptoms were startlingly few. Only twice was rectal pressure complained of. Even tumors which are impacted and fill the pelvis or occupy a major portion of the abdominal cavity only exceptionally produce pressure symptoms such as severe bladder disturbance (1 case of ischuria paradoxa) or grave obstipation. Minor dilatations of the ureter probably are overlooked unless pyelograms are taken.

Because of their gradual development and somewhat vague symptom complex, most fibroids are discovered by accident unless bleeding draws attention to the uterus. However, now and then an emergency dramatically brings it into the foreground.

*Emergency Conditions.*—Yet in the 916 patients, only five surgical emergencies arose and of these only two were directly ascribable to the fibroids. The others were: one extrauterine pregnancy, a twisted ovarian cyst and peritonitis due to pneumococci.

CASE 1.—Mrs. A. T., age 38, was rushed to a hospital because of profuse bleeding. She was found in mild shock with 37 per cent hemoglobin. Vaginal examination disclosed a billiard-ball-sized fibroid with a thick pedicle extruding from the cervix. Transcervical enucleation was done and transfusion given. Sixteen years later, curettage was done with radium insertion for fibroids and menorrhagia.

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[2] Kelly, H. A.: The Evolution of My Technique in the Treatment of Fibroid Uterine Tumors, Tr. Am. Gynec. Soc. **25:** 207, 1900. In 307 hysterectomies, 15 deaths, 4.88% mortality. Noble, C. P.: The Development and Present Status of Hysterectomy for Fibromyomata, ibid. **22:** 38, 1897. For supravaginal hysterectomy, the mortality rate was 4.9 to 5.6 per cent and for total hysterectomy 9.6 to 10 per cent.

[3] Frank, R. T.: The Choice Between Operation and Roentgenization of Uterine Fibroids, Am. J. Obst. **72:** 408, 1915.

[4] Miller, N. F.: Hysterectomy: Therapeutic Necessity or Surgical Racket? Am. J. Obst. & Gynec. **51:** 804, 1946. Similarly critical are Bieren, R. E., and Hundley, J. M.: Indications for the Removal of a Normal Uterus, Am. J. Obst. & Gynec. **54:** 321, 1947. No indications in 14 per cent and doubtful indications in 65.6 per cent.

[5] Crossen, H. S., and Crossen, R. J.: Operative Gynecology, ed. 6, St. Louis, C. V. Mosby Company, 1948. The authors, without quoting statistics or source, stated that "uterine fibroids . . . found in about 40 per cent of women aged forty." This seems an unduly high figure.

CASE 2.—Mrs. E. L., aged 41, was seen in consultation because of profuse bleeding five days after menstruation. The preoperative diagnosis was ovarian cyst with twisted pedicle, incarcerated fibroid uterus and possible ectopic pregnancy.

Operation within twelve hours showed a gangrenous pedunculated fibroid three times the size of the uterine fundus. Gangrene was due to torsion of the pedicle. After supravaginal hysterectomy, the patient had an uneventful recovery.

In my entire experience I can recall only 2 other cases of real emergency. The patients are not included in the 916 analyzed. I am describing them here in order to emphasize the rarity of emergencies requiring immediate operations.

CASE 3.—Miss R. W., age 35, was referred because of "tumor," the size of a 6 month fetus, and fibroids. The cervix was red and granular—a suspect erosion. The patient was admitted to the hospital, a biopsy of the suspect area was made. Severe bleeding not controllable by suture or cautery necessitated the patient's immediate transfer to the operating room, where a Wertheim operation was performed. The diagnosis was squamous cell carcinoma of the cervix and fibroid uterus. Postoperatively high voltage roentgen therapy was given. The patient was well eight years later.

CASE 4.—Mrs. H. S., age 46, was seen in consultation with a history of pelvic inflammation six years previously. One day after the onset of the menses, the patient had exquisite pain, temperature of 103 F., pulse rate 110 and diffuse abdominal tenderness. A large fibroid uterus reaching to the umbilicus was felt. The preoperative diagnosis was an acute abdominal condition due to rupture of a tubo-ovarian abscess or some change in the fibroids. Immediate operation revealed free pus in the abdomen, right ruptured pyosalpinx with appendix adherent and large fibroids. Supravaginal hysterectomy with complete peritonealization, bilateral salpingo-oophorectomy and appendectomy were performed. The patient had a smooth convalescence.

Aseptic necrosis manifests itself by excrutiating localized pain. I now try to tide over aseptic necrosis during pregnancy with hibernation and penicillin. This usually is feasible.

Often doctors are more frightened by hemorrhage than are the patients. It is true that being called to a home at 2 a. m. and finding a jittery husband, a terrified woman hunched in bed and writhing with cramps, with the bed clothes soaked and clots between the thighs, can be disturbing and misleading. First the diagnosis—an abortion in process or menorrhagia or metrorrhagia—must be made. The mere presence of fibroids is not decisive, as they may be present in either condition. Reassurance, a clean up of the field and aseptic local examination is indicated. Administration of an ergot preparation (a 0.2 mg. tablet of ergonovine maleate, or an ampule of ergot by hypodermic for quicker action) will show how controllable the bleeding is and give breathing time. Every physician should have the means of taking a hemoglobin reading at hand; a Tallquist paper scale is adequate. If the reading is above 60 per cent, no keen anxiety need be felt.

*Examination.*—Far oftener the physician is consulted at his office with the history of menorrhagia and metrorrhagia of varying duration. These symptoms, or urinary complaints, backache and the like, should induce him to make a pelvic examination, examine the catheterized specimen of urine and expose the cervix for visual inspection.

It would be far better if at the first visit of every new patient—with the exception of the few who are too terrified, uncooperative or reluctant, a small group readily recognized by the more experienced practitioner—the physical examination routinely included a vaginal, or in the unmarried or virginal, a rectal examination. Earlier recognition of latent conditions would be the rule. Of course, I have to take for granted that the physician's training and knowledge is adequate and therefore will make such an examination meaningful. If a pelvic tumor is thus discovered this may signify a great variety of possibilities, including uterine fibroids, fibroids and pregnancy, ovarian tumors, inflammatory exudates and rectosigmoidal neoplasms. The diagnosis is not always easy or possible.

It is needful, when some pelvic abnormality is discovered, to exercise tact and care. What the physician now says, I again repeat, may indelibly influence the future health, happiness, morale and even the fate of the patient. An incautious "You have large fibroids (they may be walnut sized [sic]), which must come out at once" may produce panic and an ineradicable conviction that operation is essential. For some patients no reassurance from no matter how authoritative a source will obliterate such an unwarranted snap verdict, and in due time she will find an operator willing to mutilate her without valid indications.

If, on the other hand, the family physician informs the patient that there appears to be something not quite right in the pelvis which he would like a specialist to feel, this may cause some temporary alarm or disquiet but not a fixed and firm conviction with ineffaceable localization as previously described.

In the present series, 80 per cent of patients with fibroids were referred by physicians, and of these the disease in 331, or 45.3 per cent, was diagnosed correctly by the referent as fibroids. However, I had to disagree as to the treatment to be pursued in more than 50 per cent of these—more often on the side of watchful waiting than on that of "immediate operation."

A consultant must employ tact and circumspection in enlightening a patient. He should form his own opinion unbiased by previous verdicts, but, in stating it to the patient, he should not minimize the opinion of the family physician if this differs from his own. One can tone down unnecessary urgency, can remove or allay the fear of cancer and emphasize the safety of further observation in those who have been told that immediate operation was necessary.

Of 916 cases, I had the opportunity of observing only 340 (37.1 per cent) for one to twenty-three years (187 up to two years, 50 for two to four years and 103 for four years or more). The majority of patients, 576 (62.9 per cent) were transient, seen only once or twice for opinion as to the therapy to be pursued. The further course of many was reported by their physicians, but, unless the patient was again seen, such reports have not been incorporated here.

Even if the practitioner for one reason or another is unable to make a reliable diagnosis of pelvic conditions, and consequently is even less in a position independently to decide on subsequent treatment, he should at least be able to judge whether the recommendation as to therapy which he receives from the specialist appears sound and shows good judgment.

Some of the many factors on which the decision as to further observation, palliative interventions or radical operation should be based are analyzed.

*Social Status.*—The uterus in a woman of 46 years who is the mother of 3 children may be of less importance than is the womb of a young woman of 24 engaged to be married. Yet this does not excuse the recent dictum of a well known colleague who told a 40 year old woman suffering from slight menometrorrhagia of short duration (cytologic spreads normal, small fibroids, normal cervix), "Your uterus is of no further use to you; it should come out." I have encountered this same point of view again and again.

Table 2.—*Status with Respect to Marriage and Children*

| Status | | No. of Cases |
|---|---|---|
| Married | | 819 |
| With children | 534 (65.2%) | |
| Childless; abortions | 76 ( 9.3%) | |
| No pregnancies | 209 (25.4%) | |
| Single | | 97 |
| Total | | 916* |

* Thirty-three were seen during pregnancy and 38 in menopause.

In my series, 819 women were married; 534 (65.2 per cent) had borne children; 76 (9.3 per cent) had had miscarriages only; 209 (25.4 per cent) never conceived. This conforms with the accepted view that fibroids *per se* do not reduce fertility. Thirty-three were seen during pregnancy. Of these, in only 5 was interruption advised and performed for paramount reasons. The main indication is rapid growth of the myomas. When the total tumor at three months of gestation reaches seven months' size, it is unwise to procrastinate further. Laparotomy, hysterotomy with delivery of the fetus and, if technically feasible, myomectomy are indicated. In a few, myomectomy with continuation of pregnancy was undertaken (pedunculated or mainly subperitoneal growths—of these nearly 50 per cent carried to term). Thirty-eight patients were in or were entering the menopause.

*Age.*—Young Women: It is obvious that the age of a patient plays a considerable role in deciding on procedure. In young women desiring children, small fibroids, especially if subperitoneal and fundal, rarely prove of clinical importance during pregnancy. I advise that they try to become pregnant with little delay before the fibroids have had a chance to enlarge further. Especially careful watching up to the fourth month is essential. If by that time the entire uterine mass is no larger than a 6 to 6½ month fetus, a normal course may be anticipated. I have rarely regretted such decision. On the other hand, if by the second month of gestation, the fibroid mass has attained the size of a 5 month old fetus or is cervical, or there is a history of repeated spontaneous abortion, I advise myomectomy during pregnancy, because if these conditions are unrelieved patients do not carry to term.

Table 3.—*Age Incidence*

| Age Group, Yr. | No. of Cases |
|---|---|
| 20-30 | 37 |
| 31-35 | 86 |
| 36-40 | 97 |
| 41-45 | 145 |
| 46-50 | 102 |
| 51-55 | 26 |
| 56-75 | 7 |

A substantial number of young women harbor fibroids. These are usually discovered in the periodic health examination or at cancer clinics. Many are small, multiple and subperitoneal or intramural, enlarging the uterus not at all or only to the size of an 8 week old embryo (531 cases). The symptoms vary from none through menorrhagia and metrorrhagia (58 per cent). Small tumors should be watched; larger growths (5 to 7 month fetal size, 90 in number) require myomectomy or, if this is not possible, hysterectomy. Of the 31 patients who underwent myomectomy in this series, nearly 50 per cent had children after operation. No final and binding promise to perform myomectomy should ever be given, because local, unpredictable conditions may force the operator to perform hysterectomy.

Older Women: The age group 40 to 50 years showed more fibroid bearers than the 20 to 40 year group (247:220). As a group they had been fertile (only 25.4 per cent never pregnant). Besides the discovery of a "tumor," irregular and/or excessive menstruation was the major symptom. Each case demanded individual consideration.

First the general health and status of the patient were ascertained. The most frequent handicaps were cardiac, with coronary antecedent; next in frequency were renal and pulmonary complications, especially bronchiectases and chronic bronchitis; varicose veins (history of phlebitis); hypertension, and obesity. In my preliminary examination, the short, fat, breathless woman with hypertension and varicose veins is labeled "poor risk," and the indications for intervention must be overwhelming before I advise operation. These are the patients on whom roentgen rays and radium are most often properly used—32 in this series.

Table 4.—*Size of Fibroids When First Observed*

| Size* | No. of Cases |
|---|---|
| Unenlarged but small fibroids palpable | 43 |
| Minute, 8 weeks | 488 |
| 9-12 weeks | 137 |
| 3-4 months | 148 |
| 5-6 months | 80 |
| 7 months or more | 10 |
| Not stated | 10 |

*The size is expressed as analogous to that of a pregnant uterus.

Many women in this age group require operation because of large growths, severe and prolonged bleeding and consequent anemia, intermenstrual spotting and abdominal pain. Some had been observed for years with small tumors with few symptoms; eventually, however, growth and bleeding increased, necessitating intervention.

*Menopause.*—Thirty-eight women had reached or were entering the menopause when first seen. Their bleeding most often was due to injudicious or too early use of estrogens. Preliminarily the hormone therapy was stopped. Formerly curettage was performed routinely. Today the cervical and vaginal secretions are examined cytologically (Papanicolaou spread for atypical cells—requiring special knowledge and experience, as well as unlimited time to read these slides) and the patient closely watched. In this series not one case of ovarian neoplasm producing postmenopausal bleeding was encountered, but this possibility must be kept in mind. A number underwent curettage with or without radium insertion. Only 2 cases of malignant growths with fibroids were noted—in one, a corpus carcinoma, and in the other, a sarcoma in a fibroid. This is in sharp contrast with

20 cases of carcinomas of the corpus uteri found among the 3,000 histories analyzed, in which the differential diagnosis lay not between fibroids and carcinoma but between carcinoma and functional bleeding. This was ascribable to the fact that the uterus in these patients was either unenlarged or in postmenopausal patients even smaller than normal.

In the sole instance in which a fibroid increased in size after the supposed onset of the menopause, supravaginal hysterectomy was performed but no malignant growth found.

Occasionally a fibroid uterus the size of a uterus at three and a half to four months' pregnancy, lying in sharp anteflexion, after onset of the climax, shrinks somewhat and, though previously symptomless, now rests directly on the bladder and causes undue urinary frequency. This may necessitate removal.

The majority of fibroids which are less than the size of a 3 month embryo gradually shrink after the menopause and within five years are no longer palpable in the fully involuted senile organ. Today, however, this desirable involutionary process too often is delayed or indefinitely postponed by early, excessive and injudicious estrogenic therapy.[6]

Occasionally a stony hard pelvic tumor is encountered in an old woman who is examined because of some acute attack of abdominal pain. Roentgenograms show calcification. These are old calcified fibroids which somehow have escaped the scalpel of the zealous operator. They do not produce the abdominal symptoms complained of. The oldest patient (not included in this series) was a woman of 80, in whom at autopsy such a calcified fibroid was found; death was due to obstruction from an overlooked carcinoma of the splenic flexure.

TABLE 5.—*Variation in Size of Fibroids During Observation*

| Number of Years of Observation | Number of Cases | | Percentage |
|---|---|---|---|
| | Increased Size | Size Not Increased | |
| Up to 2 | 86 | .. | 46 |
| | | 101 | 54 |
| 2-4 | 28 | .. | 56 |
| | | 22 | 44 |
| 4-20 | 38 | .. | 36.9 |
| | | 65 | 63.1 |

*Cervix.*—A factor of importance in planning adequate treatment is the condition of the cervix.

In this series of 916 patients, the cervix was described as normal in 661. The commonest error is due to one's stretching the cervix of a parous woman when viewing it through a bivalve speculum. This opens the os widely, exposing the bright red cervical lining. This normally red area is then diagnosed as an erosion, an eversion or "a suspect cervix." If the speculum is partly closed, the cervical lips fall into apposition, as they normally lie, the canal lining is hidden and protected; if there is no cervical discharge, I regard such a cervix as normal.

Cervical lesions which may require treatment are nabothian follicles (cautery puncture), polypi (avulsion), erosions (silver nitrate 10 to 20 per cent, linear cautery) and endocervicitis (daily injection on three successive days of 300,000 units of crystalline penicillin). In virgins, unless the indications are special, I rarely visualize the cervix. When necessary, it can be viewed without discomfort to the patient, through a long no. 14 endoscope. When indicated, spreads or cultures for gonococci, biopsies of suspect erosions and cytologic smears are made and studied.

TABLE 6.—*Condition of Cervix*

| Condition | | No. of Cases |
|---|---|---|
| Normal | | 661 |
| Symptomless lacerations | | 49 |
| Erosions | | 45 |
| Polyps | | 42 |
| Nabothian follicles | | 24 |
| Endocervicitis | | 5 |
| Single; not visualized | | 80 |
| Miscellaneous | | 10 |
| Amputated | 5 | |
| Leukoplakia | 2 | |
| Angeiomas | 2 | |
| Vaginal septum | 1 | |

*Previous Operations.*—The treatment of patients, in some instances, must be modified because of previous operations. I habitually shy away from the proud exhibitor of three or more abdominal scars and regard with suspicion operations performed for "cystic" ovaries, with additional appendectomy and ligament shortening. I have seen a number of appendectomies patently performed for dysmenorrhea and "mittelschmerz." In my series of 916 patients, 310 (33.8 per cent) had undergone one or more operations. Only the major one is recorded for each patient. The majority were fully justified, and a gratifying number of patients had been relieved of their disabilities.

TABLE 7.—*Number of Cases with Operation Previously Undergone*

| Type | No. of Cases |
|---|---|
| Appendectomy | 107 |
| Dilatation and curettage | 39 |
| Breast exploration | 31 |
| Myomectomy | 19 |
| Ovarian operation | 22 |
| Tubal | 15 |
| Uterine ligament operation | 16 |
| Gallbladder operation | 14 |
| Thyroid operation | 11 |
| Vaginal plastic | 9 |
| Cesarian operation | 6 |
| Hernioplasty | 4 |
| Miscellaneous | 7 |
| Total | 310 (33.8%) |

## TREATMENT

The treatment here suggested is based on experience and is correlated with the material so far presented. This does not imply either that my judgment was faultless, or that it was not necessary in many instances to modify or change the method of treatment of patients under observation, which in some instances extended over periods of ten to twenty years.

However, it may be noted (table 4) that in 43 cases the fibroids were so small that they did not enlarge the uterus. This usually signifies cherry-pit-sized to *cherry-sized fibroids subperitoneally located and therefore* readily palpable. In 488 cases the fibroids did not enlarge the uterus above the size of a uterus of eight weeks' pregnancy. In other words, in this large group close to 58 per cent of fibroids were of such small size that from the dimensional point of view they were negligible. Such fibroids may have been *accidental discoveries*, if symptomless, or have produced menorrhagia and/or metrorrhagia of slight to major degree, or they may have been noted in patients suffering from functional bleeding. I shall return to this important point of differential diagnosis.

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[6] Estrogens given for the relief of the neurovascular symptoms of the menopause should be prescribed in such a fashion as to eventually permit of their complete withdrawal. The present tendency to prescribe estrogens while a patient still menstruates, either regularly or irregularly, is to be decried. This premature "therapy" produces a train of symptoms which I miscall "estrogenitis"—irregular and often profuse bleeding, a thick, pasty discharge (squamous epithelial cells) and painful breasts. After the menopause has set in, I prescribe the lowest effective dose, usually a 0.5 or 1 mg. tablet of diethylstilbestrol to be taken before retiring. It is taken for twenty-eight days and then stopped until the flushes again become severe. The patient is instructed to prolong the time between each twenty-eight day "course" more and more, so that eventually she will require no more drug.

*Malignancy.*—There is no excuse for one's regarding fibroids as potentially malignant either because an ever decreasing number are found to be sarcomatous (the decrease being due to the more rigid criteria observed by the pathologist—formerly up to 10 per cent and now far below 1 per cent) or as favoring carcinoma formation.[7] In the present series, only one sarcomatous fibroid and one adenocarcinoma of the corpus occurred (0.2 per cent). The sarcoma was noted within a fibroid. The patient remained well after supravaginal hysterectomy. The other patient was operated on by me at the age of 36 years, a large left dermoid was removed and a billiard-ball-sized fibroid was excised from the fundus uteri. The patient then was lost sight of for five and a half years, when she returned to complain of intermenstrual staining. The uterus was the size of one at three months' pregnancy. At operation the uterus was found immobile in a rigid parametrium. Only supravaginal hysterectomy could be performed. The diagnosis was infiltrating adenocarcinoma of the corpus and multiple fibroids. Postoperatively a radium pack was used. The patient lived for two and a half years, dying from general abdominal carcinosis.

*In the majority of instances*, the patients that I see have been told that they required operation, often radical intervention, because of the imminent danger of cancer. The majority of those not referred by physicians usually come of their own accord because they had been told by another physician that they must submit to operation immediately.

*Medical Measures.*—Years ago I performed dilatation and curettage more frequently for excessive bleeding than I do now. At the time it was the only way known to explore the uterine cavity in order to discover submucous fibroids and what then was also considered causative of bleeding, namely, "polypoid endometrium." Today the latter is regarded as a consequence of excessive estrogenic stimulation. If ergot therapy did not control the bleeding, the curet was resorted to. Today a hysterogram, with a watery, not an oily, contrast medium, in skilful hands, is a harmless office procedure which reveals the gross abnormalities in the cavum. In order to evaluate how much of the bleeding is functional (recognizing, of course, that fibroidal growth itself is almost certainly the result of excessive or abnormal estrogenic stimuli) I now employ *with increasing confidence a modification* of the method introduced by Karnaky. A bleeding patient is given 10 mg. of diethylstilbestrol in tablet form while still in the office, and 5 mg. tablets are *given nightly* for twenty to twenty-five days. The reduction in gonadotropic secretion produced by the large dosage of estrogen (25,000 international units per milligram) should by that time reduce the excessive bleeding. The cessation or reduction in bleeding gives the attendant a breathing spell, permitting further observation and evaluation of the situation. Full and continued control of menorrhagia and metrorrhagia obtained by this therapy signifies a predominantly functional element and justifies one's further observation and occasional repetition of the "cyclical diethylstilbestrol course," keeping in mind that this powerful estrogen might, if too long continued, stimulate additional growth of the fibroids, although I have never as yet observed this effect.

*Curettage.*—Failure of medical measures (ergot, diethylstilbesterol) and unchecked bleeding with increasing anemia (hemoglobin 70 per cent or lower) justifies dilatation and curettage with general anesthesia —rarely with local paracervical anesthesia in the presence of severe constitutional disease. Particularly in women approaching the menopause this palliative operation proves effective. I performed it sixty-five times (28.5 per cent of operations). In this series *it was combined only once with radium insertion in* order to bring on the permanent menopause. Needless to say, the curettings were examined microscopically, but the results were unrevealing and uninformative except to exclude carcinoma. My insistence on this examination, quite understandably, is based on the necessity of one's never overlooking intracorporeal or high cervical malignant growths. The curet also discloses submucous fibroids projecting into the uterine cavity.

Only rarely have I removed a small uterus for intractable bleeding after dilatation and curettage has failed and when the patient is below 45 years of age. In the older group, sterilization by intrauterine administration of radium or roentgen rays is justified. Below this age, hysterectomy with retention of the ovaries is a preferable and far less radical measure. Occasionally poor physical condition makes radiation therapy the lesser danger in the younger patient.

*Size.*—In a more detailed analysis of 464 patients divided into three groups according to the size of the uterus, in the group with no enlargement up to the increase in size of eight weeks' pregnancy, it was *found justified to watch* 54.2 per cent of the patients; when the uterus reached the size of two to four months' pregnancy only 39.7 per cent were watched; of those larger than this only 18.4 per cent were deemed watchable. It follows that a reverse trend was noted in the operations performed or recommended, namely 45.8 per cent, 60.3 per cent and 81.6 per cent, respectively. In group A dilatation and curettage equaled 23.5 per cent; in group B, 16 per cent, and group C, 4.6 per cent. Hysterectomy, on the other hand, was indicated in group A in 7 per cent of the cases; in B, 37 per cent, and in C, 72 per cent. *In large tumors, the size of four months' pregnancy and larger*, operative intervention is indicated with increasing frequency (table 9).

If the tumor when first observed is the size of a 2 to 4 month fetus (table 4) (285 cases, or 31 per cent), it still is within dimensions which may be observed safely under certain conditions (35.1 per cent). Many factors may demand consideration, such as active and severe symptoms (bleeding, pain, dysuria), desire for children or existing pregnancy. When the growths are small, myomectomy rarely is indicated, unless performed in the course of other operations (ectopic [2], ovarian cysts, vaginal plastic, transcervical avulsions of submucous growths).

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[7] Frank, R. T.: Gynecological and Obstetrical Pathology, ed. 2, New York, D. Appleton and Company, 1931, p. 230. In large series of cases, cancer seemed purely coincidental with fibroids (Kelly and Cullen, 1,400 cases, 1.7 per cent; Noble, 1,118 cases, 2.4 per cent; in my own series, 400 cases, 0.5 per cent; McDonald, 700 cases, adenocarcinoma of corpus, 2.9 per cent and cervical carcinoma 0.8 per cent).

Of tumors larger than a 4 month fetus, a subgrouping into between 4 to 5 months, 5 months, 6 months and 7 months showed that in the 4 to 5 month group, 16 per cent were not operated on; in the 5 month group this figure dropped to 9 per cent, and in the next two groups it was deemed advisable to perform operation on all.

*Operation.*—Although the final decision as to the type of operation rests with the surgeon, the family physician, who knows the patient, her background, resistance, stability or lability and psychic makeup, should have some voice in deciding whether the operation should be conservative (dilatation and curettage, myomectomy) or radical (dilatation and curettage and radium therapy, supravaginal or complete hysterectomy, retention or removal of the ovaries). Unless there are special reasons, such as a morbid dread of the menopause or great psychic lability, I remove the ovaries routinely in women of 45 years or over, because in a small number these ovaries years later develop cysts or malignant changes, necessitating reoperation, sometimes too late to save the patient.

It is my custom, if the pelvis after hysterectomy is dry, the patient is in good condition and the appendix is readily accessible through the left paramedian incision, to perform a prophylactic appendectomy (30 per cent). However, in myomectomy, as some postoperative oozing is almost unavoidable, I rarely remove the appendix.

*Complete Versus Supravaginal Hysterectomy.*—If the cervix is normal and the indication for hysterectomy is clearcut and warranted, one must decide whether to perform a supravaginal hysterectomy or a complete hysterectomy. Today "the fashion," I use this term advisedly, as I have lived through many, often transient, trends, favors complete hysterectomy. I rarely remove the cervix in nonmalignant conditions. Of 358 hysterectomies in a series of about 10,000 patients, including the 3,000 here analyzed for fibroids, only 13 were complete; this included 8 vaginal hysterectomies. On the other hand, I have been consulted by a number of women for whom total hysterectomy had been performed by others, who complained of dyspareunia, dryness of the parts and (3 cases) complete eversion of the vagina. Moreover, I have been obliged to repair a not inconsiderable number of vesicovaginal fistulas which resulted from complete hysterectomy performed by various operators.

I have never observed a stump carcinoma in any of my patients for whom I had performed a supravaginal hysterectomy. This record must be due at least in part to the care which I observe in restoring the cervix to normalcy before operative intervention. It must also be ascribed in some degree to the fact that my patients predominantly are Jewish. It is well known that cervical carcinoma is infrequent in Jewish women.[8] On the other hand, in this same limited group of 3,000 patients, twenty carcinomas of the corpus uteri were encountered (0.66 per cent) in the absence of fibroids, and one sarcoma in a fibroid.

*Safety.*—Today, as mentioned in the introductory remarks, the safety of hysterectomy has been improved greatly. In 358 hysterectomies (unselected and in sequence), only 1 death occurred—the twenty-seventh in the series. Since then 331 have been performed without a fatality.

The sole death occurred on the eighteenth postoperative day, with anginal symptoms. As no autopsy was performed, it is impossible to exclude embolism with certainty, although the electrocardiogram was typical of coronary occlusion. There were no deaths in 95 consecutive myomectomies or in any of the curettages.

I have analyzed the material, with the object of determining, partly for my own satisfaction, whether the very conservative attitude with which I treat uterine fibroids is justified. The death rate in abdominal operations for fibroids (453) was 0.22 per cent, which is small. The operative mortality as published in the literature varies between 1 and 2.5 per cent.[9] Although the risk incurred by operation is not excessively great, this in no way justifies operation when not indicated. Too often small symptomless fibroids are removed either by myomectomy or by hysterectomy if the woman "no longer needs her uterus." The patients are frightened into consent by allusion to the possibility of cancer or the danger of excessive hemorrhage. I can make this criticism with assurance because of the many patients—including very poor risks—whom I have literally saved from operation and then observed for many years. Few of these have, because of new developments, required operation subsequently.

TABLE 8.—*Size of Uterus*

| | Number of Cases | | |
|---|---|---|---|
| Status | A * | B * | C * |
| Operation indicated........ | 137 (45.8%) | 70 (60.3%) | 40 (81.6%) |
| Watching advised.......... | 162 (54.2%) | 46 (39.7%) | 9 (18.4%) |

* In group A the uterus was the size of that in pregnancy up to eight weeks, in group B, two to four months and in group C, above four months.

TABLE 9.—*Operation*

| Size * | Number of Cases | Comment |
|---|---|---|
| 4 months | 31 | 14 operated on by me<br>12 operations advised<br>5 no operation (1 pregnant, 1 poor risk, 1 menopause)<br>2 myomectomies |
| 5 months | 34 | 16 operated on by me<br>15 operations advised<br>3 no operation (1 in menopause, 1 pregnant, 1 diabetes)<br>4 myomectomies |
| 6 months | 15 | 3 operated on by me<br>12 operations advised<br>4 myomectomies |
| 7 months | 3 | 3 operated on by me<br>0 myomectomies |

* Size is expressed as analogous to that of the uterus in pregnancy.

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[8] Vineberg, H. N.: The Relative Infrequency of Cancer of the Uterus in Women of the Hebrew Race, in Contributions to Medical and Biological Research, New York, Paul B. Hoeber, 1919, vol. 2, p. 1217; Am. J. Obst. **53**: 410, 1906.

[9] Weir, W. C.: A Statistical Report of 1771 Cases of Hysterectomy, Am. J. Obst. & Gynec. **56**: 1151, 1948 (panhysterectomy in 71 per cent, vaginal hysterectomy in 11 per cent, supravaginal in 18 per cent; mortality rate, respectively, 1.13 per cent, 1.68 per cent and 0.93 per cent). Munnell, E. W.: Total Hysterectomy, Am. J. Obst. & Gynec. **54**: 31, 1947. (Of 1,798 hysterectomies at Bellevue Hospital, 1,583 were subtotal, mortality rate 1.76 per cent, and 215 were total, mortality rate 2.32 per cent.)

SUMMARY

1. Fibromyomas of the uterus, the most frequent tumors of the female genital tract, are functional growths dependent to a large degree on estrogenic stimulation.

2. In 3,000 unselected gynecologic patients, 916, or 30.5 per cent, had fibroids. This undoubtedly is a higher percentage than that of the female population in general.

3. The most frequent and characteristic symptoms of fibroids are excessive bleeding, prolonged bleeding or too frequent uterine bleeding (54.7 per cent). Pain occurred in 20 per cent; 6.2 per cent had no symptoms whatever.

4. Emergencies requiring immediate surgical intervention are most unusual, only 6 in 916 cases. In only 2 was the emergency due to the fibroids themselves (torsion of subperitoneal growth, extrusion through the cervix).

5. Pelvic examination should be performed routinely by the general practitioner; conversely, the gynecologist should likewise examine his patients completely to weed out poor risks.

6. When the general practitioner discovers uterine fibroids, he should be cautious and reserved in announcing the presence of a "tumor" to the patient, in order to avoid alarming and producing a severe and permanent psychic trauma. He may safely tell the patient that:

(*a*) Fibroids rarely require emergency treatment.

(*b*) They do not lead to cancer formation.

(*c*) More than 50 per cent may be watched and may never require operation.

(*d*) Small fibroids situated on the fundus rarely interfere with pregnancy and safe delivery.

(*e*) At the menopause small fibroids involute and disappear.

7. In the presence of any pelvic tumor, the question of differential diagnosis of fibroids, pregnancy, abortion, corpus, even cervical carcinoma and functional bleeding arises constantly. Pregnancy tests, vaginal and cervical cytologic smears, hysterograms, response to diethylstilbestrol and eventually dilatation and curettage are utilized in this differentiation.

8. The age of the patient, the parity, the wish for children, the variety and intensity of symptoms and the amount of disability all must be considered and weighed in deciding on treatment.

9. The "poor risk" patients—those with cardionephritic or pulmonary disease and obese persons—should not be subjected to abdominal operation. In them, dilatation and curettage and radium or roentgen therapy are indicated as palliative or curative measures.

10. Involution of fibroids near or at the menopause is delayed by premature administration of estrogens.

11. Fibroids up to the size of a 3 month fetus may be expected to shrink to clinically unimportant residua with the menopausal involution.

12. The condition of the cervix plays an important role in therapy. Nabothian follicle, erosion, polypi and endocervicitis require correction before operative measures are undertaken.

13. In this series, 33.8 per cent of patients had undergone one or more operations previously.

14. Fifty-eight per cent of the fibroids were negligible from the dimensional point of view—not above the size of an 8 week old fetus. Of these 54.2 per cent lent themselves to extended observation, the patients being seen twice yearly.

15. Medical measures include correction of cervical lesions, ergot therapy for excessive bleeding (not more than two days in one cycle to avoid ergotism) and cyclical prescription of diethylstilbestrol.

16. Palliative operations include curettage and myomectomy.

17. Radical intervention includes dilatation and curettage with radium insertion, roentgen rays given through multiple ports of entry in especially poor risks, and abdominal and vaginal hysterectomy.

18. To decide on the procedure indicated in the treatment of fibroids and pregnancy requires expert experience.

(a) A mass above the size of a 6 month old fetus seen in a patient in the second or third month of gestation will rarely allow gestation to proceed to term and usually necessitates myomectomy.

(b) Fibroids blocking the pelvis may require myomectomy early or cesarian operation and myomectomy at term.

(c) Aseptic necrosis, especially in pregnancy, in spite of pain and fever, usually subsides with conservative treatment.

19. Fibroids above the size of a 4 month old fetus necessitated operation in 90 per cent of the patients.

20. In my opinion, routine complete hysterectomy for fibroids is unjustified. It entails added risk and side injuries and leaves a dry and more shrunken vaginal canal.

21. The present tendency in the treatment of fibroids still is too radical. Operation is performed too often.

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# PERIPHERAL NERVE INJURIES FROM ADMINISTRATION OF PENICILLIN

## Report of Four Clinical Cases

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Toxic effects of penicillin have been described in experimental animals and human beings affecting the meninges, nerve fibers and the cerebral cortex. Walker, Johnson and Kollros[1] demonstrated that penicillin injected into the cortex of monkeys or men induced convulsions. They also showed, by duplicating their results with pure crystalline penicillin, that these convulsions were not due to impurities that may be found in crude penicillin. Walker and Johnson[2] and later Walker, Johnson and Kollros[1] demonstrated convulsions as an indication of toxicity when penicillin was applied to the cerebral cortex of cats, dogs, monkeys and human beings. They observed electroencephalographic changes which paralleled these convulsive and subconvulsive states. Borkowski and Forster[3] stated the belief that these results might have been obtained from the intracortical injections, but later supported the work of Walker and his group by reproducing the

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[1] Walker, A. E.; Johnson, H. C., and Kollros, J. J.: Penicillin Convulsions: The Convulsive Effects of Penicillin Applied to the Cerebral Cortex of Monkey and Man, Surg., Gynec. & Obst. **81**: 692, 1945.

[2] Walker, A. E., and Johnson, H. C.: Convulsive Factor in Commercial Penicillin, Arch. Surg. **50**: 69 (Feb.) 1945.

[3] Borkowski, W. J., and Forster, F. M.: Convulsant Effects of Penicillin on the Cerebral Cortex, J. Neuropath. & Exper. Neurol. **6**: 201, 1947.

convulsions and electroencephalographic changes by applying penicillin-soaked pledgets to the cerebral cortex of cats. Histologic changes in the cerebral cortex after the injection of penicillin have been noted by Walker and Johnson.[4] These effects following the use of penicillin intrathecally have been described by Sweet, Dumoff-Stanley, Dowling and Lepper[5]; Erickson, Masten and Suckle[6]; Siegal[7]; Bailey,[8] and others. Sweet and his co-workers[5] observed mild sensory changes as one variant and various degrees of motor paresis associated with hypotonic bladders, urinary retention and complete paraplegia as another form of clinical manifestation of toxicity. Erickson and his co-workers[6] concluded that a moderate toxic reaction to intrathecal penicillin therapy resulted in adhesive arachnoiditis and a severer response exhibited itself as transverse myelitis. Siegal,[7] Bailey[8] and others have also made this observation and have noted that such a response occurs about ten days after the injection. Walker and Johnson,[4] Erickson[6] and others have noted manifestations of radiculitis in animals and human beings; and Walker and Johnson[4] have demonstrated demyelinization and adhesive arachnoiditis in experimental animals.

In spite of the widespread parenteral use of penicillin in various vehicles and in various concentrations, there appears to be but one report suggesting a toxic effect on the peripheral nervous system. In 1946 Kolb and Gray[9] described "localized peripheral neuritis" in 7 patients who had received multiple intramuscular injections of penicillin for various infections. These patients characteristically noted changes ten to twenty-one days after their treatment and in some instances in the course of therapy. In each case the motor disability was greater than the sensory loss. In 2 of the 7 cases, muscular weakness persisted beyond the observation period of five months. The protocols of 4 of the 7 cases reported, cases 1, 2, 4 and 6, described the administration of the penicillin in the region of a nerve trunk subsequently affected by the neuritic process.

This report will describe the clinical course of 4 patients in whom there developed a peripheral nerve lesion immediately following the administration of penicillin into or about a peripheral nerve. This penicillin-induced lesion was characterized by the rapid onset of severe tingling pain of short duration, a pronounced and only slowly improving motor disability and a moderate inactivation of sensory axones.

## REPORT OF CASES

CASE 1.—C. S., a 6 year old white girl, received 1 cc. of penicillin in wax and oil, 100,000 to 300,000 units, in the course of treatment for an infection of the upper part of the respiratory tract given intramuscularly in the left buttock. She at once began to cry and complain of severe pain radiating from the point of injection down the posterior aspect of the thigh, the lateral aspect of the calf to the lateral half of the foot. Within fifteen minutes her attending physician noted the loss of all deep tendon reflexes and a paralysis of all of the muscles innervated by the sciatic nerve. The pain persisted ten days. Return of motor activity began after one month and had progressed steadily. No sensory changes or loss of sweating were described by the parents, although they had noted that the left extremity was colder than the right.

On examination in the outpatient clinic thirteen months after the injection, it was noted that the patient walked with a slapping gait characteristic of one with a sciatic nerve paralysis. The sciatic nerve was palpable but not tender. The gluteal musculature was normal. An estimated 25 per cent weakness of the biceps femoris existed, as well as a 60 per cent weakness in motor power of the gastrocnemius and soleus muscles as compared with the intact extremity. The intrinsic musculature of the foot was similarly affected. The extensor musculature of the foot and toes functioned against gravity but fatigued rapidly. There was no sensory loss; sweating was normal, and the skin temperature was equal to that of the unaffected extremity. Since the motor disability was improving, the patient was returned to the referring physician for continued physical therapy.

In the follow-up examination eighteen months after the injury, it was observed that the atrophy had almost entirely been replaced by normal musculature. Motor activity approached normal. The involved muscles did not fatigue so rapidly, and an estimated 30 to 50 per cent of her initial motor disability had returned to normal.

CASE 2.—H. A., a 43 year old white woman, was operated on in the Duke Hospital for a pelvic disorder. Postoperatively she was given aqueous penicillin every three hours, in 30,000 unit doses. On the third day after operation an injection was given rather far posterolaterally in the left arm in the region of the triceps muscle. She immediately experienced pain radiating down the posteromedian aspect of the upper arm and the medial aspect of the forearm into the fourth and fifth fingers. The tingling paresthesia was followed by a feeling of pressure in the fingers described as "as if my fingers were going to fall off." Sensory loss was complete over the ulnar dermatome but disappeared rapidly and completely within the next three hours to be supplanted by tenderness over the ulnar nerve distribution, which was still present at the time of neurosurgical consultation eight months after the injection. The patient had noted decided weakness on hand grasp, but this progressively improved.

At the time of examination pressure over the ulnar nerve elicited a tingling paresthesia spreading distally. The nerve segment was tender when palpated at the epicondylar groove. There was mild atrophy of the ulnar aspect of the forearm, the first interosseous space and the hypothenar eminence. There was slight hyperextension of the proximal phalanx and flexion of the distal phalanx of the fifth finger, indicative of an ulnar nerve injury. There was an estimated 10 per cent loss of motor power in all muscles innervated by the left ulnar nerve. There was no sensory loss, and skin temperature and sweating were comparable to the unaffected extremity.

On examination fifteen months after the injury, palpation over the course of the ulnar nerve at and above the elbow still caused pain and tingling paresthesia. Motor power had improved, but the patient thought that 50 per cent of the original disability still was present. There was no detectable atrophy, but weakness of all the muscles innervated by the ulnar nerve was definite and objectively only moderately improved.

CASE 3.—R. D., a 34 year old white man, received aqueous penicillin as treatment for a superficial leg infection. During the process of administration of one of his treatments, 100,000 units, in the midportion of the upper arm, he experienced severe aching pain radiating from the site of injection posteriorly to the lateral aspect of the elbow. He was nauseated and felt as if he would faint. As the penicillin was injected the pain increased, and over the next three to four seconds a sense of numbness progressed down the radial extensor surface of the forearm to the base of the thumb and second finger. At this time a wrist drop was noted and extension of the digits was impossible. For two weeks tingling persisted over the distribution of the superficial radial nerve, and for several more weeks intense sensitiveness over the course of this nerve was noted.

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[4] Walker, A. E., and Johnson, H. C.: Penicillin in Neurology, Springfield, Ill., Charles C Thomas, Publisher, 1946, p. 202.

[5] Sweet, L. K.; Dumoff-Stanley, E.; Dowling, H. F., and Lepper, M. H.: The Treatment of Pneumococcic Meningitis with Penicillin, J. A. M. A. **127**: 263 (Feb. 3) 1945.

[6] Erickson, T. C.; Masten, M. G., and Suckle, H. M.: Complications of Intrathecal Use of Penicillin, J. A. M. A. **132**: 561 (Nov. 9) 1946.

[7] Siegal, S.: Transverse Myelopathy Following Recovery from Pneumococcic Meningitis Treated with Penicillin Intrathecally: Report of Case, with a Note on Current Methods of Therapy, J. A. M. A. **129**: 547 (Oct. 20) 1945.

[8] Bailey, P.: Chronic Leptomeningeal Thickening Following Treatment of Meningitis with Sulfa Drugs, Ann. Surg. **122**: 917, 1945.

[9] Kolb, L. C., and Gray, S. J.: Peripheral Neuritis as Complication of Penicillin Therapy, J. A. M. A. **132**: 323 (Oct. 12) 1946.

At the time of examination eight months later, extension of the fingers, wrist and elbow was lacking. Abduction of the thumb was lost, and all muscles innervated by the radial nerve were atrophic. Faradic current stimulation produced no response in any of the muscles supplied by the radial nerve. The triceps and radial tendon reflexes were absent on the left, and evaluation of reflexes on the right was 2 plus. There was hypalgesia over the usual sensory domain of the radial nerve. The left radial nerve was explored with local anesthesia. There were no epineural adhesions or evidences of extraneural compression. The epineurium appeared thickened over a distance of 3 cm. This segment was somewhat whiter than a normal nerve trunk and to palpation was definitely firmer. Faradic stimulation above and below the lesion produced tingling in the thumb and index finger, and stimulation of the triceps branch produced slight contraction.

On follow-up examination fifteen months after the injury, there was no sensory change. Atrophy had not progressed, and function of the fingers and elbow was as before. There was slight return of motor function in the extensors of the wrist.

Case 4.—F. C., a 26 year old white woman, received penicillin in wax as part of ambulatory therapy for an infection of the upper part of the respiratory tract. At the time of the treatment she removed her coat, held it in her left hand and pulled her sleeve up with her right hand. The penicillin was injected intramuscularly in the posterior aspect of the left arm, at which time a sudden severe aching pain associated with tingling paresthesia was noted over the distribution of the radial nerve as in case 3. At the instant of injection, her coat fell from her hand and a wrist drop was noted. Paresthesia persisted for three months in the first web space.

At the time of examination three months after the injury, loss of function of the extensors of the wrist and fingers and of abduction of the thumb existed. Faradic stimulation produced no response. The muscles were atrophic and the radial tendon response on the left was absent, but present (2 plus) on the right. Sensory changes were noted over the sensory domain of the radial nerve. At operation with local anesthesia the nerve was found flattened and surrounded by a thickened epineurium. Embedded in the epineurium were many globules of what appeared to be oil or wax. External neurolysis was done, and further examination revealed what appeared to be a normal nerve segment. Faradic stimulation of the radial nerve as it emerged from behind the humerus caused paresthesia in the thumb and contraction of the brachioradialis muscle. No other muscles responded.

When examined ten months after the injury, the atrophy was much more pronounced and there was no improvement in the complete motor disability or sensory loss.

In essence, these patients exhibited what appeared to be a toxic reaction to large concentrations of penicillin injected into or adjacent to major peripheral nerve trunks. This antibiotic-induced neuritis was characterized by intense immediate pain radiating distally along the course of the affected nerve segment, a complete, but in 2 cases rapidly regressing, sensory loss and an early motor disability that, in 2 instances at least, became a chronic and static disability. The reaction bears no resemblance to any of the well known traumatic sequelae of procaine anesthesia, for instance. The reaction may be more intense in the presence of a vehicle such as wax, but is probably not wholly dependent on such a vehicle. The operative observations in 2 cases suggest an intraneural lesion and do not indicate extraneural compression. The clinical picture predicates a more profound alteration in motor axones. The cases have much in common with those reported by Kolb and Gray. The delayed onset in their cases may have been due to slow infiltration of the toxic agent from a distance or may have occurred during the course of treatment. The neuropathologic changes in experimental animals are now being studied in this laboratory.

## CONCLUSION

Four cases of injury to a major peripheral nerve by penicillin injections are reported. In view of the established toxicity of this antibiotic in other parts of the nervous system, it is assumed that this neuritis represents a specific reaction to a high concentration of penicillin.

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# EXTRADURAL HEMATOMA IN INFANCY AND CHILDHOOD

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The formation of extradural hematoma is well known as a result of head injury in adults.[1] It is much less frequently recognized that extradural hematoma often occurs in infancy and childhood, the literature being confined to isolated case reports. In fact, such authors as Munro and Maltby,[1b] Peet[2] and Gurdjian[1c] stated that the lesion is a rarity in the pediatric age group. Our experience indicates that the occurrence of extradural hematoma in infants and children is more frequent than the literature suggests, 20 instances being found among approximately 1,000 cases of head injury in patients below the age of 12 years. Since the clinical signs usually differ greatly from those seen in adults, the extradural hematomas may be easily overlooked. Prompt neurosurgical treatment is life saving and has been associated with a low mortality rate. For these reasons, we summarize the material of a pediatric neurosurgical service in dealing with this lesion.

In adults, extradural hematoma formation is suggested by a history of trauma to the head with immediate but brief loss of consciousness, followed by a lucid interval and a second loss of consciousness. Munro and Maltby,[1b] among others, stated the belief that a fracture of the skull is always present. McKenzie[1a] emphasized the progression of signs: drowsiness gradually changing to coma and weakness to hemiparesis. The dilatation of the pupil contralateral to the hemiparesis also is progressive, as are the signs of increasing intracranial tension as reflected by changes in pulse, respiration and blood pressure. The spinal fluid is under increased pressure but shows no abnormalities in cellular content.

The possibility of extradural hematoma formation must be kept in mind as clearly in dealing with infants and children with recent trauma to the head as with adults. The age incidence in our series is shown in figure 1. A little over half were infants, and the rest were evenly distributed to the age of 12 years. In both groups, the incidence was twice as great in male as in female subjects.

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[1] (*a*) McKenzie, K. G.: Extradural Hemorrhage, Brit. J. Surg. **26:** *346-365,* 1938. (*b*) Munro, D., and Maltby, G. L.: Extradural Hemorrhage: Study of Forty-Four Cases, Ann. Surg. **113:** *192-203,* 1941. (*c*) Gurdjian, E. S., and Webster, J. E.: Extradural Hemorrhage: A Collective Review of the Literature and a Report of Thirty Cases of Middle Meningeal Hemorrhage and Four Cases of Dural Sinus Hemorrhage Treated Surgically, Internat. Abstr. Surg. **75:** *205-220,* 1942.

[2] Peet, M. M., in Brock, S.: Injuries of the Skull, Brain and Spinal Cord: Neuro-Psychiatric, Surgical and Medico-Legal Aspects, ed. 2, p. 123, Baltimore, Williams & Wilkins Company, 1942.

The clinical observations in extradural hematoma in infants and children are different from those due to the same lesions in adults. In our group of 20 patients below the age of 12 years, each with an extradural hematoma, only 3 showed an initial loss of consciousness with subsequent lucid interval, while 17 had a latent period between injury and the development of stupor. Seven of the 20 patients ultimately became comatose, including the 3 with initial loss of consciousness followed by a lucid interval. Swelling of the scalp at or near the site of injury is a common sign. It usually, but not necessarily, overlies a fracture of the skull. Of great importance in diagnosis is the progression of drowsiness to stupor or coma, especially when accompanied with circulatory and respiratory changes suggesting compression of the medulla or with localizing neurologic signs. Hemiparesis was usually noted. The Babinski sign and dilatation of the pupil on the side of the lesion were frequently encountered, but convulsions and signs of cranial nerve involvement were rare. There was a decerebrate postural pattern in 5 patients. Jefferson[3] suggested that this phenomenon results from the disturbance of circulation to the higher centers caused by their displacement and compression by the hematoma, which permits the midbrain reflex arcs to be released from cortical inhibition. It must be borne in mind that cortical contusion or laceration, as well as intracortical hematoma or acute subdural hemorrhage, may produce these same neurologic signs. Precise diagnosis must sometimes await operation.

The blood loss in an extradural hematoma has systemic effects in infants not found in adults. Blood loss of 100 to 150 cc. is sufficient to produce profound shock in an infant, and extradural hematomas often involve bleeding of this degree or even more. As much as 400 cc. has been found. Four infants in this series, with presumably normal red blood cell counts and hemoglobin levels before injury, showed preoperatively red blood cell counts from 2,000,000 to 3,700,000 with corresponding hemoglobin levels. For this reason, pronounced anemia and shock following a head injury in an infant may point to intracranial bleeding, even though there are no abnormal neurologic signs, unless the anemia can be explained by trauma to other viscera. Since infants with acute blood loss into the extradural tissues do not always show bradycardia and increase in pulse pressure, decision, in these circumstances, must be guided by the degree of shock and by the onset and progression of neurologic signs.

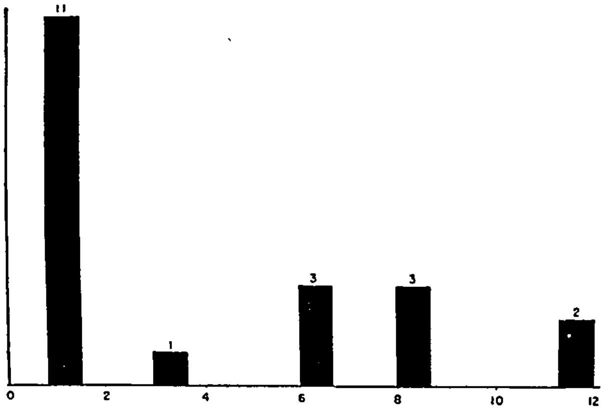

Fig. 1.—Graph showing age incidence. In the series of 20, there were 14 male and 6 female patients. (The horizontal row of figures shows the age in years, and the figures above the bars shows the number of patients in each age group.)

Lumbar puncture was performed in 12 of the 20 patients. In 8 there were no abnormalities in cellular content. In 4, appreciable numbers of red blood cells were found. In 1 of them there was also a greater number of white blood cells than could be accounted for by bleeding alone. This led to a tentative diagnosis of infection in spite of the history of trauma. The expandable skull of this 9 month old infant had evidently been able to accommodate the clot long enough for polymorphonuclear leukocytes to appear in the cerebrospinal fluid in response to irritation of the meninges. The pressure of the cerebrospinal fluid in 5 patients ranged from 230 to 450 mm. of water, but was normal in 4 others. We are unable to explain the normal pressures. Munro and Maltby[1b] recorded similar observations without obvious explanation.

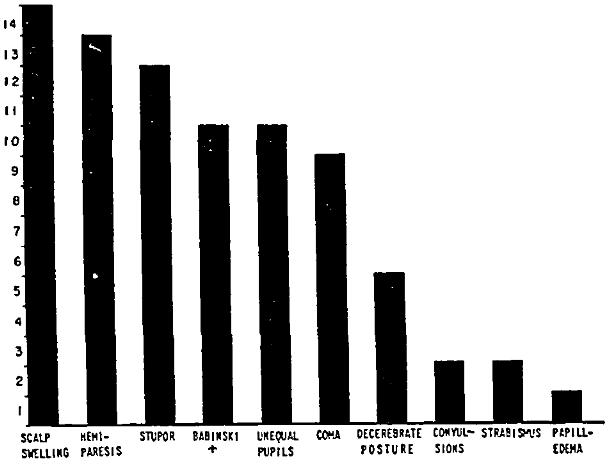

Fig. 2.—Graph of common physical observations. (The vertical column of figures at the left shows the number of patients.)

Fractures (fig. 3) were demonstrated in 12 of the patients by roentgenograms or at operation, while none was found in 8 patients. Diastasis of sutures was demonstrated roentgenographically in 12 patients, 6 of whom had no evidence of fracture. In addition, a decided diastasis of the squamosal suture was encountered at operation in the absence of fracture.

## MECHANICS OF EXTRADURAL HEMATOMA

The factors chiefly responsible for deflection of blows to the head are the looseness of the attachment of the skin and galea to the cranium, the multidirectional mobility of the cervical part of the spine and the curvature of the skull. In children, the open sutures and elasticity of the cranial bones also help to dissipate the force of trauma and protect the intracranial contents.

Until their final closure, the sutures are regions of fusion of the outer periosteum and dura. The dura at this age is loosely attached to the central parts of the bones of the vault, fixation being firm only near the edges of the bones and along the sutures. In order for changes in skull contour to take place as growth progresses, there is resorption at the center of the bones and concomitant dilatation of the meningeal blood vessels. This process is most active during the first two years of life, when the increase in brain size is greatest, but continues until the contour of the adult skull has been established, usually at the age of 8.

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[3] Jefferson, G.: Bilateral Rigidity in Middle Meningeal Hemorrhage, Brit. M. J. 2: 683-685, 1921.

Since the fibrous and osseous layers of the cranium have different coefficients of elasticity, compression or expansion will set up shear stress at the junctions of the layers. This leads to tension on and ultimate rupture of blood vessels. Potential spaces for the collection of extradural hemorrhage exist at the centers of the frontal, parietal and occipital bones, where the attachment of dura to skull is less firm than at the edges. In this series, there were 4 patients with extradural hematomas limited to the potential parietal space and 1 to the frontal space. The clot extended beyond these limits only when a fracture crossed a suture. This mechanism may account for our 8 cases of extradural hematoma formation in the absence of fracture. The anatomic relationships of skull and dura explain loculation of the clot beneath the parietal and frontal bones.

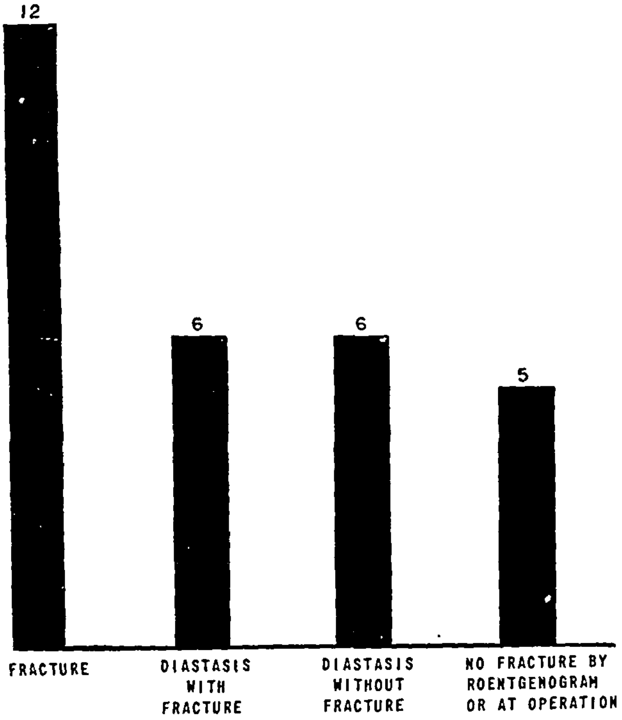

Fig. 3.—Incidence of skull fracture and suture diastasis (no preoperative roentgenography was done in 3 cases). (The figures above the bars show the number of patients.)

SOURCE OF HEMORRHAGE

Jones[4] in 1912 drew attention to the fact that the middle meningeal artery is not the sole source of hemorrhage into the extradural space. He found that extradural hemorrhage is frequently produced by rupture of the thin-walled veins of the dura, both those accompanying the middle meningeal artery and the tributaries of the dural sinuses. In the adult, the middle meningeal artery is the more frequent source. This mechanism is sometimes the cause of extradural bleeding in children, but is less important than injury to veins since the meningeal grooves are shallow at this age and gradually deepen as time goes on.

PROGRESSION OF SIGNS

If the total traumatic force is not expended on the skull and its coverings, the residual force will be brought to bear on the brain itself. Cerebral concussion, contusion, laceration, subdural hemorrhage or intracortical hemorrhage, or any combination of these, may result from the action of the residual force.[5] The immediate loss of consciousness seen in head trauma may result from a cerebral concussion or from the other conditions herein listed. An initial loss of consciousness occurred in 3 of our 20 cases, indicating that the pliable skull of infancy and childhood may dissipate relatively more force than the adult skull with rigid bone and closed sutures. The occurrence of a latent period between the traumatic episode and the advent of neurologic and of increased intracranial pressure signs is therefore of greater importance in diagnosis than the usual syndrome seen in adults. The length of the latent interval is dependent on the caliber and type of vessel lacerated and on capacity of the pliable skull to accommodate the clot by stretching the fibrous sutures and lines of fracture. If, however, the rate of clot formation exceeds the compensatory increase in cranial volume provided by the pliable calvarium, compression of the brain occurs.

Pressure is built up in the latent period, which has varied from fifteen minutes to seven days in this series. The appearance of signs at the end of a long latent interval constitutes just as much of an emergency as it does after a short one. Operation may be deferred on a patient in shock if the extradural bleeding drains into the subgaleal space by means of a decided diastasis or a fracture line. The vessels of the outer periosteum as well as the diploic circulation add to the subgaleal collection of blood. The total accumulation of blood in extradural hematomas in this series varied from 100 to 400 cc. If the patient is an infant or small child, the loss of this amount of blood may lead to profound shock and must be promptly replaced. In these circumstances several days may be allowed for recovery from the cerebral injury usually associated with the hematoma. Operative removal of the clot, subgaleal and extradural, may then be undertaken with decreased mortality and morbidity rates.

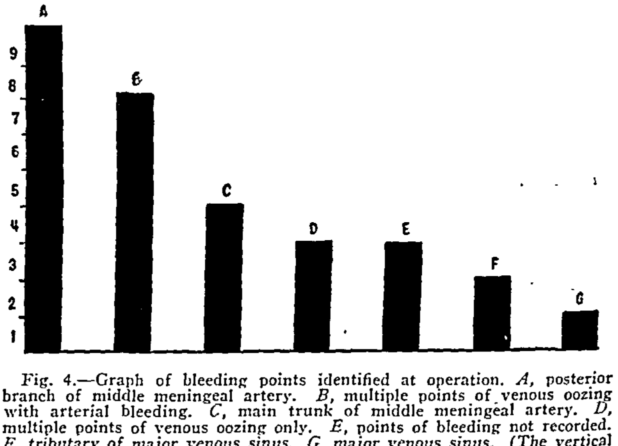

Fig. 4.—Graph of bleeding points identified at operation. *A*, posterior branch of middle meningeal artery. *B*, multiple points of venous oozing with arterial bleeding. *C*, main trunk of middle meningeal artery. *D*, multiple points of venous oozing only. *E*, points of bleeding not recorded. *F*, tributary of major venous sinus. *G*, major venous sinus. (The vertical column of figures at the left shows the number of patients.)

PREOPERATIVE CONSIDERATION

Roentgenologic examinations and lumbar puncture are useful adjuncts in diagnosis, but neither should be carried out if the patient is in shock. In many instances, correlation of the history with the neurologic examination presents sufficient evidence of progression of signs to warrant trephining. Therefore, measures to combat shock are instituted and the operative procedure is carried out as soon as possible. Palpation of localized swelling often indicates the approximate position of the fracture. This becomes more obvious if an ecchymosis is seen when the head has been shaved. As soon as a patient with a severe head injury is admitted, the patient's blood is matched with blood in the blood bank. This has proved to be a most worth while measure, because blood loss in the pediatric age group is less well tolerated than in older subjects. A polyethylene tube is inserted in the exposed saphenous vein while the patient is still in the emergency ward.

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[4] Jones, F. W.: On the Grooves upon the Ossa Parietalia Commonly Said to be Caused by the Arteria Meningea Media; J. Anat. & Physiol. **46**: 228-238, 1912.

[5] Denny-Brown, D., and Russell, R. W.: Experimental Cerebral Concussion, Brain **64**: 93-164, 1941.

### OPERATIVE PROCEDURE

After complete shaving of the head, the skin of the suspected side is prepared with suitable antiseptic solutions and so widely draped that the exposure, if necessary, can be carried from the foramen spinosum to the superior longitudinal or lateral sinus. Should ligation of the external carotid artery be contemplated, it is advisable to include the neck in the preparation and draping. Local infiltration of 0.5 per cent procaine hydrochloride with epinephrine is used on all patients. Open drop ether anesthesia is often necessary as a supplement if the patient is restless or struggling. The incision for the initial burr hole is placed so that it can be extended to expose the temporal bone for a classic subtemporal decompression. If the clot is in the frontal region, the bone flap is turned down in the manner originally described by Cushing.[6] In small infants, it has been more expedient on several occasions to use heavy scissors in making the bone flap. On discovery of a clot, a blood transfusion is started, if it has not already been instituted as a resuscitative measure. If the bleeding is arterial, tantalum clips or silk sutures are used for hemostasis. Absorbable hemostatic materials, judicious endothermy coagulation or clipping is used for venous sources of hemorrhage. In most cases the brain expands rapidly to its normal volume. At this point it is well to open the dura in order to inspect the subdural space and cortex, so as to determine whether there is subdural bleeding or cortical damage. It has not been necessary in this series to leave a dural decompression unless extensive cortical damage has been apparent. All layers of the wound are closed with silk. If a large dead space remains, a drain from the dura is left in place for twelve to sixteen hours and sulfadiazine and penicillin are given prophylactically for forty-eight hours. Burr holes are done on the opposite side of the calvarium at a later date in children in order to determine the presence or absence of a contralateral clot. In infants, subdural taps through the open suture lines yield sufficient evidence to establish the presence or absence of a subdural clot.[7]

Postoperatively, general supportive care is given. Lumbar punctures are carried out daily if the initial spinal fluid examination reveals evidence of bleeding into the subarachnoid space. This procedure is continued until red blood cells in the spinal fluid count fall below 500 cells per cubic millimeter. Lumbar punctures are continued if there are signs of increased intracranial pressure, hyperthermia or a change in neurologic signs. The pressure is customarily reduced by one-half at each lumbar puncture. Most of the infants and younger children tend to regenerate bone over their areas of bony decompression within a year.

### MORTALITY

Eighteen patients are living and 2 dead. One of the patients who died had severe cerebral laceration and thrombosis of the superior longitudinal sinus. The other died with hyperthermia. Of the 18 surviving patients, only 1 had a neurologic deficit. This patient has had one convulsion and has a persistent mild hemiplegia. It is interesting to note that this patient had decerebrate postural patterning before operation.

### SUMMARY

Extradural hematoma proved by operation occurred twenty times in a series of a little over 1,000 pediatric patients treated for head injury. The differential diagnosis is discussed. The signs manifested by the patients in the series are listed and considered in regard to the mechanics of the skull. The indications for trephination are given. This is the only certain method of diagnosis and of adequate treatment. The operative procedure is outlined. There were 2 deaths in a series of 20 infants and children.

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## THE PROBLEM OF MEDICAL CARE FOR NAVAJO INDIANS

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Recently, considerable comment has been made regarding the health services rendered to Navajo Indians, apparently because the Navajo tribe (numbering approximately 65,000 persons) is the largest Indian tribe in this country and the health services rendered are far from adequate. Several factors enter into this: that the geographic domain of this tribe is large, that travel is difficult, that their culture differs from ours and that the few physicians ordinarily employed have little or no conception of cultural differences or are insufficiently trained to carry out medical inquiry and care of the sick. These, and other similar or contingent criticisms, appear warranted. But statements made with reference to the scarcity of certain diseases among the Navajos are based on insufficient evidence or the lack of diagnostic procedures; such concepts are the cause for much speculation and concern and should be reconsidered in the light of modern medicine.

Generally, physicians have been taken from civil service lists, given no training in colonial field medicine or in the cultural aspects of the problem and sent to field medical duty. These physicians, with few exceptions, are usually poorly qualified, are graduates of inferior medical schools and have received a minimum period of hospital duty required by civil service. In certain instances mission hospitals have given much better service. A complex situation has arisen wherein concepts and ideas have generally become distorted and one sided. One of the features that is most lacking is that there is no connection between the programs and the medical schools. Without the continued spirit of inquiry and challenge of academic medicine, such field programs have a tendency to fall into dull, uninspired routines. Without a pathologist, a suitable laboratory association, without medical school affiliation, without special training of field physicians (a matter that the London School of Tropical Medicine and Hygiene considers of great importance), the medical program among Indians can be only what it is.

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[6] Cushing, H.: The Establishment of Cerebral Hernia as a Decompressive Measure of Inaccessible Brain Tumors with the Description of Intermuscular Methods of Making the Bone Defect in Temporal and Occipital Regions, Surg., Gynec. & Obst. **1:** 297-314, 1905.

[7] Ingraham, F. D., and Matson, D. D.: Subdural Hematoma in Infancy, J. Pediat. **24:** 1-37, 1944.

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The opinions and views of this article and those of the authors are not necessarily those of the United States Indian Service.

### PRESENT FACILITIES

Cognizant of this situation last October 1948, the Navajo Indian administrators endeavored to change the type of medical care. First they established a sound working staff at their central hospital and added the diagnostic facilities needed.[1] The men chosen were not necessarily from civil service lists, but did meet, obviously, the civil service requirements. These men had sufficient training to direct adequately a special service. Thus, the base hospital today has a staff consisting of a surgeon in chief, a physican in chief and the other chiefs of staff, such as a pediatrician, a gynecologist, an obstetrician and a pathologist; a dispensary physician, a specialist in eye, ear, nose and throat and a specialist in tuberculosis. To this group is added adequate laboratory personnel. Regular staff meetings are held, papers are read and clinical pathologic conferences introduced. There are two committees, a library committee and a drugroom committee, the first dealing with journals and textbooks being purchased for the library and the second group endeavoring to place the choice of drugs on a scientific basis. The hospital is equipped to carry out special studies, such as metabolism, electrocardiography, roentgenology and bacteriology.

Since July 1, 1948, there have been 2,171 admissions to the hospital service; the outpatient department has had 5,488 new cases with 8,038 repeated visits. In March 1949, the outpatient department reported 906 new patients and 1,514 repeated visits. These figures far exceed any in previous years. It becomes at once apparent that such a number of visits and admissions is beyond the capacity of the staff described and that many of the patients should have been taken care of in the smaller field hospitals on the reservation. Up to April 1 of this year, the pediatric service alone admitted 647 children, and the remainder of the admissions, 1,424 cases, were distributed among the other services.

In the medical service, with about 450 admissions, there were 53 patients with intrinsic cardiac disease varying from pericarditis to mitral stenosis; malignant diseases in all services, exclusive of the outpatient department, occurred in 19 patients. Since many assume that neoplastic disease does not occur among the Navajo Indians, these cases are listed as follows:

| | |
|---|---|
| Myxosarcoma with | 1 |
| Carcinoma of the | 1 |
| Epidermoid carcinc | 1 |
| Carcinoma of the cervix, grade III | 2 |
| Adenocarcinoma of the biliary tract | 2 |
| Carcinoma of the uterus, grade III | 2 |
| Carcinoma of the prostate | 2 |
| Papillary tumor urinary bladder | 1 |
| Carcinoma of the stomach | 1 |
| Tumor of the pituitary | 1 |
| Leiomyosarcoma of the urinary bladder | 1 |
| Epidermoid carcinoma of the conjunctiva | 1 |
| Multiple myeloma | 1 |
| Lymphosarcoma cervical and mediastinal lymph nodes | 1 |
| Seminoma with metastases | 1 |

It is at once obvious that both heart disease and malignant disease are present among Navajo Indians and that as the year continues new cases will appear.

Among the 2,171 admissions there were 120 deaths, 10 of which were still births, 43 due to terminal tuberculosis and 48 due to infant mortality. Just within the past few months has the autopsy record been at all commendable, with 9 autopsies having been performed. However, it is to be noted that biopsy material is constantly being submitted to the pathologist, a fact which may in small measure compensate for the low record of autopsies.

For the sake of brevity the surgical service record is shown in the table.

The procedures shown in the table are divided between the gynecologic service and the general surgical service. There were 206 live births in the obstetric service during the period described.

This, then, has been the gradual evolution of the base hospital, the Navajo Medical Center. An affiliation with a medical school is strongly needed. There is a host of unsolved problems—the cause of the diarrheas, the adequacy of the treatment of trachoma, the epidemiologic aspects of trachoma, the nutritional situation of the Navajo, intestinal parasitism, atypical pneumonias, anemias and tuberculosis.

With reference to tuberculosis, the x-ray mobile unit reported that, out of 16,000 persons examined, 1,859 showed evidence of progressive pulmonary tuberculosis. Yet the sanatorium at Fort Defiance for Navajo Indians has a capacity of only 100 beds. This year's admissions to the sanatorium totaled only 67 patients. Even though the BCG program will alter the course and susceptibility of persons to the disease, the crowded dwellings (hogans) and the presence of open lesions, which yield large numbers of organisms, still prevails and will continue to create the disease in susceptible persons. The base hospital has referred 68 patients to the sanatorium, a number which exceeds those admitted to that institution.

*Surgical Services*

| Month | Major Procedure | Minor Procedure | Casts |
|---|---|---|---|
| October 1948 | 6 | 33 | 3 |
| November 1948 | 8 | 53 | 9 |
| December 1948 | 12 | 39 | 12 |
| January 1949 | 10 | 51 | 14 |
| February 1949 | 13 | 40 | 5 |
| March 1949 | 15 | 61 | 3 |

*Field Service.*—The field service now has a hospital at Tuba City, one at Shiprock, one at Winslow and one at Crownpoint. These hospitals have from 30 to 50 beds each and contain a surgical theater, dispensary and laboratory. They should act as the first clearing station and maintain public health programs within their area. An adequate number of field nurses should be obtained for these isolated areas (Winslow is not isolated). The field nurse program has just begun to develop (only two field nurses were present in early 1948; now there are eleven nurses). The program is as yet in its infancy, but plans for a well coordinated field service are being made, which will include immunization and other matters pertinent to field duty. Once again the choice of the physician in these districts is of paramount importance, and the program at Tuba City (Western Navajo area) and Crownpoint (Eastern area) are now showing progress because the physicians are sufficiently qualified to direct such programs.

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[1] One year ago, there was only one dentist for the entire reservation; today there are three full time dentists. At present there are two sanitarians and one sanitary engineer. The hospital nursing staff for the entire reservation, excluding the field nurses, numbers forty-nine registered nurses. The entire program is directed by Dr. Henry W. Kassel, Director of Health, under the general organization in which James M. Stewart is superintendent.

COMMENT

It is possible that further small hospital units will have to be developed. So far the field service has been the neglected service; this explains, in part, the heavy load of patients coming to the base hospital at Fort Defiance. Actually, the base hospital should be used for diagnostic purposes, treatment in selected cases, special surgical procedures and research. The field hospitals should send to the base hospital any patient who they feel requires special attention.

The tuberculosis situation needs immediate attention, and facilities should be made available for the care of the tuberculous patient. Here, again, affiliation with institutions specializing in this type of medicine is of supreme importance.

To date the problem of giving medical care to the Navajo Indians is a challenging one and deserves careful study and effort rather than the emotional approach used by many persons. The formula for rendering medical aid to Navajo Indians is by no means solved—advice, criticism and help are solicited and, if given with careful thought, will be greatly appreciated. It is to be remembered that the Navajos have a rich and creative culture and that any program developed must in great measure consider their way of life.

## Special Article

# TREATMENT OF PARAPLEGIA RESULTING FROM TRAUMA TO THE SPINAL CORD

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*(Concluded from page 958)*

4. *Blood.*—As already indicated, the first weeks after spinal cord injury are marked by an extremely abnormal blood picture. In the first twenty-four hours there begins a series of poorly understood changes. Serum protein begins to fall sharply, followed later by a drop in hemoglobin, and later by a decrease in red blood cells. At the end of the first week, the serum protein may reach levels below 5.0 Gm. per hundred cubic centimeters, the hemoglobin below 10 Gm. per hundred cubic centimeters and the red blood cells below 3,500,000 per cubic millimeter. In the presence of decubiti and bladder infection, these low levels are usually reached, and the albumin-globulin ratio is reversed. If decubiti are not present at this time, they are most likely to develop unless careful turning is carried out. It is far better to anticipate these changes by the administration of whole blood, calculated as 1 pint (473 cc.) for each 0.5 Gm. that the hemoglobin level is found below 14 Gm. per hundred cubic centimeters. Decubiti are much less a hazard, and, more important, the patient resists infection better, his appetite improves and his general well-being is enhanced. To attempt to combat these changes by the intravenous administration of protein digests,[38] plasma or serum is futile. These infusions must be run almost constantly and do not remain in the blood stream long enough to alter the picture greatly. Then, too, each of these substances leads to sensitization.

In addition to these substances, decided diminutions in vitamin levels, especially ascorbic acid, will often be found. The general tendency to the routine administration of various vitamins cannot be condoned. In some military hospitals, before meal medication consisted of three full 1 ounce (28 Gm.) glasses of vitamins to each paraplegic patient, almost too much for the patient to consume as the main course of the meal. When deficiencies are indicated by low levels in the blood, the necessary elements should be administered hypodermically until food intake is normal or above, at which time they should be discontinued. It is unlikely that supplementary vitamin D is ever warranted in otherwise normal adults. Furthermore, until more is known of the exact nature of the mechanisms of calcium excretion in the recumbent patient, any agent which is likely to increase calcium absorption from the intestines should be avoided. Vitamin A has been implicated in stone formation.[39] With the factors of recumbency, stasis and infection already present, a deficiency of vitamin A is unlikely to assume much importance. In a large group of "rapid stone formers," no significant difference in the rates or numbers were seen in a group given high supplements of vitamin A as compared with a control group given no supplements. Vitamin C should be given when deficiency can be demonstrated, on the basis of reports that deficiency leads to delayed healing.[40] No deleterious effects from its administration have been noted, but when only traces were found in the blood, as much as 1,000 mg. were needed daily by mouth or 500 mg. by hypodermic injection to restore normal levels. The tendency to withhold citrus fruits from these patients on the basis of the resulting alkaline tide is unwarranted,[41] for these substances serve as a palatable source of fluid, citrate and vitamin C. There is no reason why the B complex vitamins should be given, and yet the repeated demonstrations of their relation to the central nervous system would indicate that they can be given as drugs with benefit,[42] if not as vitamins alone.

The level of nonprotein nitrogen of the blood is found to rise during the early stages after injury and in infections of the upper part of the urinary tract. A rise of the creatinine level implies serious renal damage. Therapy should precede such changes. Urinary calcium will be found to increase sharply within the first week of recumbency and will reach a plateau two to three times normal until ambulation is started, and then it slowly returns to approximately normal levels.[43] It is rare to find any elevation in blood levels of calcium, phosphorus or phosphatase during these striking changes.

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[38] Elman, R.: Maintenance of Nitrogen Balance by Intravenous Administration of Plasma Proteins and Protein Hydrolysates, Physiol. Rev. **24:** 372-389 (July) 1944.

[39] Higgins, C. C.: Renal Lithiasis, Springfield, Ill., Charles C Thomas, Publisher, 1944.

[40] (*a*) Taffel, M., and Harvey, S. C.: The Effect of Absolute and Partial Vitamin C Deficiency on the Healing of Wounds, Proc. Soc. Exper. Biol. & Med. **38:** 518-525 (May) 1938. (*b*) Hartzell, J. B., and Stone, W. E.: The Relationship of the Concentration of Ascorbic Acid of the Blood to the Tensile Strength of Wounds in Animals, Surg., Gynec. & Obst. **75:** 1-7 (July) 1942.

[41] Howard, J. E.; Parson, W., and Bigham, R. S., Jr.: Studies on Patients Convalescent from Fracture: III. The Urinary Excretion of Calcium and Phosphorus, Bull. Johns Hopkins Hosp. **77:** 291-313 (Oct.) 1945.

[42] Ward, A. A., Jr., and Kennard, M. A.: Effect of Cholinergic Drugs on Recovery of Function Following Lesions of the Central Nervous System in Monkeys, Yale J. Biol. & Med. **15:** 189-228 (Dec.) 1942.

[43] (*a*) Howard.[41] (*b*) Freeman, L. W.: The Metabolism of Calcium in Patients with Spinal Cord Injuries, Ann. Surg. **129:** 177-184 (Feb.) 1949. (*c*) Flocks, R. H.: The Preventive Treatment of Calcium Urolithiasis: The Important Role of Early and Frequent Roentgenographic Examination, Clinics **3:** 103-132 (June) 1944. (*d*) Dietrick, J. E.; Whedon, G. E.; Shorr, E., and others: Effects of Immobilization upon Various Metabolic and Physiologic Functions of Normal Men, Am. J. Med. **4:** 3-36 (Jan.) 1948.

It is apparent that the leukocyte count shows a high normal or slightly high level. This usually results from the presence of subclinical bladder infection alone. Mention is made only to serve as a basis for later discussion.

5. *Other Features.*—Considerable care should be exercised with respect to the nails, and hygiene should be superb. Bed baths are at best inadequate, and the perineum is often neglected, especially in male patients. These should be checked frequently.

Among the complications already mentioned which might arise in the early stages is epididymitis. It is singled out for special consideration because of the high frequency with which patients with this disorder are operated on for acute appendicitis. The symptoms of nausea and vomiting are frequent. Lower quadrant rigidity (this is before the return of reflexes) and rebound tenderness are usual in patients with lesions below the tenth dorsal dermatome and are found in patients with high lesions as well. Coupled with a moderate elevation of temperature and elevation of the leukocyte count, the diagnosis of appendicitis is appealing. However, an examination of the epididymis readily reveals the source of the difficulty, and local treatment coupled with systemically administered penicillin gives prompt resolution. In the many patients seen, of whom only 17 came to autopsy during the first year of treatment, only 1 showed appendicitis, and in this case the cause of death was massive empyema. However, at least 30 of these patients underwent removal of the appendix after their injury, with no indication on the records that the appendix had been abnormal in any way, and with most having shown full blown epididymitis the day after operation. This should not take attention from the fact that appendicitis is as likely to occur in these patients as in any other.

Pain is deserving of special attention. If the patient suffers from root pain which is not relieved by traction, the possibility of relief by surgical decompression of the affected roots should be considered, provided that the procedure can be undertaken with relative safety. If the pain is not of the root type, it rarely requires medication of any kind. Certainly, morphine or its derivatives and substitutes should never be given unless the patient's personality structure is essentially healthy. The grounds for this statement include the undesirability of depressant drugs like morphine in many neurosurgical cases and the extreme vulnerability of the paraplegic patient to addiction to drugs.[44] Sparing use of codein is justified in a few patients only. On the other hand, intramuscular or oral administration of phenobarbital is tolerated well and serves the same end. It is often useful, for the patient usually is greatly disturbed after discovering his disability. However, adequate support by psychotherapy, together with adequately planned occupational activities, will usually obviate the need for phenobarbital.

## LATE CONSIDERATIONS

1. *Pain.*—As just mentioned, pain must be dealt with vigorously. It is difficult to determine just how severe pain is in the early stages, although acute root pain has been reported to be severe enough to kill.[14c] Aside from the early period, pain usually appears at about the sixth week following injury. In injuries of the cauda equina, this is likely to be of a root type and gradually increases in severity until the very life of the patient is in jeopardy.[44] Decompressive laminectomy is not highly successful at this time, but should be tried first. If pain persists, a bilateral section of the anterolateral spinothalamic tracts high enough to insure a level of thermanesthesia and analgesia above the fourth thoracic dermatome should be done.[45] The principal objection to a cordotomy at a lower level is that all too frequently these patients have a "sympathetic" type of pain in addition to root pain, and to secure relief from all pain the level must reach above the fourth thoracic dermatome. Another distinct advantage to cordotomy at this level is the relative infrequency of postoperative girdle pain. For the "sympathetic" type of pain, it is rare that any procedure is necessary. Of the numerous complaints of the paraplegic patient, this constant burning type of pain is prominent most frequently when there is preoccupation with the disability, or after all other complaints have been resolved. Most of these patients, and they comprise a large percentage of the total, can tolerate this pain well enough if they are active. The similarity of some of these complaints to those of vascular disease and causalgia has prompted some to remove the sympathetic ganglions. No case has been seen in which results resembled in any way those obtained with vascular injuries and causalgia.[46] Murphey[47] and Mayfield,[48] however, have expressed the opinion that relief can be obtained by sympathectomy, but their patients have failed to obtain long-lasting relief. Perhaps the extension of the sympathectomy upward to include the upper thoracic ganglions might provide complete relief, which has not been afforded by low thoracic and lumbar procedures. Experiments now in progress[49] indicate cross-over of pathways and higher entrance in the spinal cord of painful impulses of a vascular origin than is generally believed. It must not be forgotten that the site of injury is the spinal cord or its nerve roots, leaving inflammatory and glial reactions as a possible source of pain. Finally, pain may be almost totally psychic, as implied in the remarks about medication. The main point for differentiation resides in the fact that the patient is unable to describe the pain accurately, in contrast with those suffering from root pains, and is inconsistent in his description as to type and location (which is not the case with the patient complaining of "sympathetic" pain). Therapy consists of reassurance or, when necessary, more vigorous psychiatric therapy. Many psychiatrists will evade calling the pain psychic or will declare that the patient has adequate damage to his central nervous system to account for it. The patient with a personality which requires much support may be overly sensitive to pain,

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[44] Freeman, L. W., and Heimburger, R. F.: Surgical Relief of Pain in Paraplegic Patients, Arch. Surg. **55**: 433-440 (Oct.) 1947.

[45] (*a*) Freeman.[44] (*b*) Fay, T., and Gotten, N.: Controlled Spinal Anesthesia: Its Value in Establishing Appropriate Levels for Cordotomy, Arch. Neurol. & Psychiat. **30**: 1276-1281 (Dec.) 1933. (*c*) Hyndman, O. R., and Wolkin, J.: Anterior Cordotomy: Further Observations on Physiologic Results and Optimum Manner of Performance, ibid. **50**: 129-148 (Aug.) 1943. (*d*) Kahn, E. A.: Anterolateral Cordotomy for Intractable Pain, J. A. M. A. **100**: 1925-1928 (June 17) 1933.

[46] Shumacker, H. B., Jr.; Speigel, I. J., and Upjohn, R. H.: Causalgia: I. The Role of Sympathetic Interruption in Treatment, Surg., Gynec. & Obst. **86**: 76-86 (Jan.) 1948.

[47] Murphey, F.: Personal communication to the author.

[48] Mayfield, F. H.: Sympathectomy for Pain, in Transactions of Conference on Spinal Cord Injuries, Army Service Forces, Second Service Command, 1945, pp. 146-148.

[49] Freeman, L. W.; Shumacker, H. B., Jr.; Wayson, E. E., and Stahl, N. M.: Conduction of Painful Impulses from the Extremities Via the Sympathetic Nervous System, Federation Proc. **7**: 36-37 (March) 1948.

and the institution of indicated psychotherapeutic procedures may decidedly reduce the patient's reaction to pain. Certainly, both the physical and psychologic damage should be given careful consideration.

Numerous drugs have been tried on various types of pain, with the majority failing to accomplish much in the way of relief. Among these were cobra venom, curare, intravenous administration of alcohol and intravenously given procaine hydrochloride. No patient obtained lasting benefits, although enough encouraging responses were seen to warrant their further trial. Of more significance than these procedures were the various modes of nerve blocks. In an occasional patient, trigger zones can be found and relief sometimes follows massive local infiltration with very dilute procaine hydrochloride solutions. Repetition of the procedure sometimes gives lasting relief. Injection of appropriate nerve roots has also yielded occasional good results, especially when repeated. A few cases of relief for appreciable periods of time have resulted from sympathetic ganglionic blocks for the sympathetic type of pain. Continuous spinal anesthesia has been similarly successful, but is hazardous. Continuous extradural blocks have given startlingly good results in several patients. One might say that every avenue of conservative treatment should be used if the patient's health is not declining, but radical measures should then be instituted. It is certainly not true that root pain "dies out" [50] and that cordotomy is unsuccessful. The writings of White,[51] Hyndman,[45c] Kahn [45d] and many others are in complete disagreement on this point with the views expressed by Davis and Martin.

In patients who have suffered pain for prolonged periods, it might be advantageous to perform a limited prefrontal lobotomy,[51] to excise part of the sensory cortex.[52] With rehabilitation as the primary aim, every effort should be made to make rehabilitation possible.

2. *Spasms*.—Flexor spasms are an almost constant occurrence in patients with injury to the spinal cord,[53] and only those with destruction of the distal segments show continued flaccidity. Obviously, patients with injury of the cauda equina will not show spasticity unless the cord is damaged, and then the spasms are limited in nature. Reflexes begin to appear before the sixth week and are often of the withdrawal type by that time. If voluntary motion is to reappear, it will have done so before this time in the majority of patients. It might be noted that it is not uncommon for the patient, his nurse or even his physician to be misled by reflex movement of the paralyzed extremities. Early the appearance of such movement is often misinterpreted as the beginning of the return of voluntary motion. Aside from this, it is of importance to note the time of appearance of such phenomena as the Babinski response (dorsiflexion of the great toe, often with spreading of the toes). When this phenomenon or any other reflex action is seen within hours after injury to the spinal cord, it can be assumed that the spinal cord lesion is incomplete. This might alter the opinion somewhat as to the type of therapy. However, this response (Babinski) or any other reflex response has no significance as to prognosis at any other time. Extensor responses have been widely heralded as indicative of incomplete lesions.[54] However, it is not unusual to find extensor responses in the presence of complete anatomic transection of the spinal cord.[55] This point has not attracted sufficient attention and must be stressed. To stray for a moment, an amusing incident might be cited. A patient was referred to the psychiatric service largely for resolution of the question of the advisability of prefrontal lobotomy. He showed a combination of traumatic paraplegia, pain and paranoid schizophrenia. It was decided that "radical" neurosurgery should await "conservative" methods, such as insulin shock therapy. No objections were raised, and the suggestion that the patient be saved for presentation to a consultant at a demonstration clinic was agreed on. After a careful and detailed presentation by one of the residents, the visiting consultant made a brief examination of the patient. He then issued forth with such statements as: "The presence of reflexes indicates that the lesion of the spinal cord is incomplete. . . ." Shades of the old Bastian-Bruns law, which stated that after transverse lesions of the spinal cord in human beings, reflexes are abolished and never reappear.[56] The consultant's opinions were scored in red and promptly disregarded. It is almost inconceivable that advocates of concepts antedating "laudable pus" are still with us, but their influence is still strong enough to require comment.

Once flexor spasms begin, their course is largely determined by many factors. Not the least of these is the presence of complications such as decubiti or infections of the urinary tract. It is likely that either of these will initiate sufficient afferent impulses to extinguish the pattern of extension. The more primitive pattern of reflex withdrawal will obtain, with the semifinal stage being represented by paraplegia in flexion.[2e] If the patient is kept in good health, extensor reflexes will appear in almost every patient with a complete transverse section of the spinal cord. Thus, a favorite prognostic sign of old loses much of its significance. The often-heard phrase that flexor spasticity wears out after a year can hardly be passed on without almost prohibitive reservations. That reflexes will not become worse after a year in a healthy paraplegic patient is a fact. However, once flexor reflexes become well established, they diminish only to a basic minimum. This occurs as the decubiti are healed and as the bladder becomes automatic and free of infection. Just what this minimum level of flexor spasticity will be is an individual matter. From the point of view of a wheel chair existence, most will have an inconsequential amount of flexor spasm, if they ever had flexor spasm at all. However, for a full program of rehabilitation, even minor flexor spasms may prove to be harmful. Each patient must be watched carefully for such impeding spastic contractions as strong adduction or hip flexion. These can be corrected by peripheral nerve section.[57] In the neglected patient, when paraplegia in flexion is threatening the very life of the patient—as it almost always does—the anterior spinal roots from the eleventh dorsal through the first sacral (and possibly the second sacral) should be sectioned.[58] The value of this procedure is illustrated by the following instance.

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[50] Davis, L., and Martin, J.: Studies upon Spinal Cord Injuries: II. The Nature and Treatment of Pain, J. Neurosurg. 4: 483-491 (Nov.) 1947.

[51] White, J. C.: Painful Injuries of Nerves and Their Surgical Treatment, Am. J. Surg. 72: 468-488 (Sept.) 1946.

[52] Horrax, G.: Experiences with Cortical Excisions for Relief of Intractable Pain in the Extremities, Surgery 20: 593-602 (Nov.) 1946.

[53] Freeman, L. W., and Heimburger, R. F.: The Surgical Relief of Spasticity in Paraplegic Patients: I. Anterior Rhizotomy, J. Neurosurg. 4: 435-443 (Sept.) 1947.

[54] (*a*) Head and Riddoch.[2e] (*b*) Davis and Haven.[13] (*c*) Cairns, H., and Fulton, J. F.: Experimental Observations on the Action of Radon on the Spinal Cord, Lancet 2: 16 (July 5) 1930.

[55] (*a*) Freeman, L. W., and Heimburger, R. F.: Spasticity in Transverse Lesions of the Spinal Cord in Humans, Federation Proc. 6: 105 (March) 1947. (*b*) Macht, M. B., and Kuhn, R. A.: The Occurrence of Extensor Spasm in Patients with Complete Transection of the Spinal Cord, New England J. Med. 238: 311-314 (March 4) 1948.

[56] Bastian, H. C.: On the Symptomatology of Total Transverse Lesions of the Spinal Cord with Special Reference to the Condition of the Various Reflexes, Med.-Chir. Tr. 73: 153-217, 1890.

H. J., a young Negro soldier, was admitted with a lesion at the level of the sixth dorsal segment, resulting from a gunshot wound about nine months before admission. Examination showed no neurologic change from that seen in the original examination, which had shown a complete transection. The legs were sharply adducted and flexed with the knees against the chest. The heels were open to the os calci, and the ischial tuberosities were both exposed where the heels had kept constant pressure. The inner surfaces of the knees were bared, the patellas were exposed, and early erosion had begun on the chest, all from the constant spastic rubbing at these points. However, the most important decubiti were at the hips. Although the external appearance of these showed granulating areas no greater than 10 cm. in diameter, huge pockets were present in each. These pockets extended around the greater trochanters and led to huge osteomyelitic cavities representing almost total destruction of the acetabulum, head and neck of both femurs, with extension down both femoral shafts. A sacral decubitus extended as high as the second lumbar spinous process. At first appraisal, it seemed wisest to agree with the prognosis found in the patient's transfer records—death in a month or less. However, other experiences with patients in almost equally severe conditions led to consideration of anterior rhizotomy. He was given blood transfusions, and the decubiti were carefully dressed. Spinal anesthesia demonstrated the presence of far advanced contractures. Anterior rhizotomy was carried out without anesthesia other than that provided by the injury, and the patient was still alive at last examination, about two years later.

There is no need for patients to be allowed to deteriorate into this deplorable state. It can result only when there is insistence that flexor spasticity will wear out. Patients with complete lesions and disabling flexor spasticity should all be considered for early anterior rhizotomy. Certainly in civilian practice, this decision must be reached early in order to protect the financial status of the patient. As such, exploration of the site of injury assumes added importance, for proof of anatomic transection would hasten the decision to utilize anterior rhizotomy with the advent of disabling spasms. Without assurance that the transecting lesion is anatomic rather than physiologic, it is difficult to approve of a destructive procedure such as anterior rhizotomy. In the occasional patient, freeing of arachnoid adhesions will produce remarkable relief. Other procedures for relief of spasm, such as posterior rhizotomy, alcoholic injection of the spinal cord and continuous spinal anesthesia, are not generally regarded as successful enough to warrant use.[59] There is little usefulness for drugs in the treatment of flexor spasticity in patients with complete paraplegia. My experience is not in accord with the enthusiastic reports of others.[60] The amount of relief seen in incomplete paraplegia is in itself so limited that curare cannot be relied on to give much improvement. Furthermore, in a series of cases of complete paraplegia (more than 100) there was not 1 case in which relief worthy of mention was seen, despite the use of doses far greater than any advocated for patients who are not receiving artificial respiration. All patients were treated to levels of toxicity. The same can be said of neostigmine.[61] Quinine was briefly investigated and showed some promise. The depressant effect of the barbiturates is usually equal to anything demonstrable by other drugs. Despite the apparent lack of action of these drugs, it is hoped that the search will be continued for drugs which will depress spasmodic movements, without the deleterious side effects of neostigmine and curare.

Physical therapy was used constantly for the patient with spasms. In many, Hubbard tank baths proved to have a relaxing effect, but in some the relaxation was followed in several hours by severer bouts of spasm. Deep massage proved to have little usefulness, but light massage was more efficacious. Ambulation often reduced spasm in incomplete lesions; in some complete lesions this was also true, although in most the violence of the spasmodic movements was increased.

Of the seemingly more radical surgical procedure, such as excision of the scarred stump of cord,[62] it can be said only that further research is still needed. Any procedure which damages the cord severely will abolish spinal cord reflexes for about six weeks, a point which must be remembered in evaluation of any therapy.

## REHABILITATION

Rehabilitation is the principal means of reaching the ultimate goal whereby the paraplegic patient accomplishes a reorientation to his disabled state and enters society again as a useful citizen. There is little agreement as to the percentage of patients with paraplegia who can reach this goal. As stated by Munro[1c]:

> If he has been properly treated, every patient with a spinal cord or cauda equina injury who is intelligent and cooperative and has the use of the shoulder, arm and hand muscles can be made ambulatory; can have such control of the bladder and bowels as to sleep through the night without either getting up or wetting himself; can carry out ordinary activities throughout the day without soiling himself with feces or having to evacuate his bladder oftener than once every three hours; can lead a normal social life, and within the limits of his intellectual capacity, can earn a satisfactory living.

This attitude is taken by most heads of paraplegia services and by Covalt.[63] Many others have expressed the opinion that none could be rehabilitated. Is the optimism of Munro or the pessimism of his detractors representative of the greatest likelihood? It was estimated that approximately 2,500 soldiers suffered spinal cord injury and survived to be returned to the States during World War II. Of these, approximately 10 per cent had paralysis of all four limbs. This cuts the figure of the number who could use their hands to 2,250. The late death rate was low, in our series less than 3 per cent, thus cutting the number to about 2,175. In the present centers for the care of paraplegic patients, approximately 1,000 are still hospitalized. This puts over 50 per cent at home. A questionnaire sent to several hundred patients known to have been discharged indicated that the vast majority met the requirements for being designated as rehabilitated. Checking those who had not been rehabilitated against their data on intelligence and aptitude showed that many of them were deficient in these fields. Of those still in the hospital, many could leave if the factor of social security could be established. If a physician assumes that his job is ended with the healing of visible wounds, then rehabilitation will almost always fail. Rehabilitation must encompass every phase of human activity, or it will likewise fail. Thus, failures to date cannot be blamed on any deficiency in knowledge, but in the application of known methods. The simplest answer to the problem is to insure a hospital bed for each patient and to care for his immediate medical needs on a domiciliary basis, with the hope that the pathetic condition will not last too long. In the patient past middle age, it may well be that ambulation is impossible and that one must be content with care in bed. However, this is not true for the average younger patient or for many of the older ones in whom at least wheel chair ambulation is usually possible. Any failure to reach full rehabilitation in young intelligent patients should be blamed on the social order that permits medical apathy and ignorance of the possibilities. Even if the patient has intelligence of a low order—and an unfortunately high number of such are represented in the present group—there still exists the possibility of total rehabilitation. To convert this possibility into a reality, everything around the patient must be taken into account, and proper corrections made. For example, if a patient springs from a tenement area, he must have new surroundings, such as that provided by a beneficent community, as depicted in the pages of a popular magazine.[64] To insure continued health, he must be active. To maintain activity and to provide income, an occupation must be provided. The range of activity in the search for a fitting vocation is by no means limited. One patient recently wrote that he was awaiting the decision on an appeal to an order denying him a commercial airplane pilot's license. A skilled pilot (he had been in a plane only once before injury), he is keeping busy by doing radio repair work (also learned since his injury). Such cases are not exceptions. Others have set up watch repair shops, taverns and small newspapers. All in all, one cannot expect a man whose best efforts without injury would make him the second best shoe repairman in town to be tuned to the position of town mayor—but he can be made the second best shoe repairman. To reach the goals briefly discussed, the following pattern is given for guidance:

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[57] Freeman, L. W.: A Simple Combined Approach to the Obturator and Femoral Nerves, Surgery **24**: 968-971 (Dec.) 1948.

[58] Munro.[1c] Freeman and Heimburger.[23]

[59] Freeman, L. W., and Heimburger, R. F.: Surgical Relief of Spasticity in Paraplegic Patients: II. Peripheral Nerve Section, Posterior Rhizotomy, and Other Procedures, J. Neurosurg. **5**: 556-561 (Nov.) 1948.

[60] (a) Schlesinger, E. B.: Use of Curare in Oil in the Treatment of Spasticity Following Injury of the Spinal Cord, Arch. Neurol. & Psychiat. **55**: 530-534 (May) 1946. (b) James, D. F., and Braden, S.: The Use of Curare in the Treatment of Spastic Paraplegia, J. Neurosurg. **3**: 74-80 (Jan.) 1946.

[61] Kabat, H., and Knapp, N. E.: Use of Prostigmine in Treatment of Poliomyelitis, J. A. M. A. **122**: 989-995 (Aug. 7) 1943.

[62] Scarff, J. E., and Pool, J. L.: Factors Causing Massive Spasm Following Transection of the Cord in Man, J. Neurosurg. **3**: 285-293 (July) 1946.

[63] Covalt, D. A.: The Rehabilitation of the Veteran with Severe Spinal Cord Injury: A Modern Medical Triumph! Occup. Therapy **25**: 187-190 (Oct.) 1946.

*a. Psychologic Rehabilitation.*—It is essential that the patient be told as soon as possible that he will never walk normally again and that he will have loss of voluntary control of his bowel, bladder and sexual function. If laminectomy has been done, the physician often is better able to prognosticate. The technic of placing new patients near others with severer lesions, especially if these patients have progressed with rehabilitation, deserves special emphasis. The patient must have supreme confidence in the doctor, for severe emotional trauma results from a disinterested physician's telling the patient of his prognosis or relying on the family to convey the bad news. At the same time that the prognosis for voluntary function is given, a careful outline of the possibilities in rehabilitation should be given. Without this opening approach, it is difficult to get the patient started on the course to rehabilitation. Psychiatric consultation is rarely advisable in the otherwise normal patient, for the patient has supreme confidence in two men—his personal physician and his surgeon, who should deal with the psychologic problem promptly and properly. Although the emotional trauma resulting from the revelation of the severity of the physical injury is great, it is important to get the full cooperation of the patient early. Honesty with the patient pays great dividends in cooperation. If it cannot be stated with positiveness that the prognosis is bad, then it should be stated that the assumption of its being bad carries with it the best approach. This is necessary to prevent delay in one's initiating rehabilitative procedures while awaiting hoped-for function that may never appear. It is essential that all aspects of the future be discussed. This includes the home situation, finances, ambitions and desires. Relatives must be interviewed. Needless to say, a complete medical and social history is essential. With the acceptance of disability and the determination to go through the necessary steps to return to society, the future course of the patient is almost assured. Psychic deterrents, such as tubes in the bladder, are removed promptly as previously indicated. In the discussion, it is assumed that the patient is receiving ideal care. As the predicted levels of attainment are reached, the emotional status of the patient will show distinct improvement, until all that is left is reflection on the absence of sexual ability. In this sphere lies the greatest single barrier still unsolved in the complete rehabilitation of the paraplegic patient. Female patients, especially if unaccustomed to orgasm, are more readily satisfied. In men, the lesions of the cauda equina leave an exasperating inability to consummate the sexual act. With lesions to the spinal cord, tricks may be found which induce priapism of a sufficient nature to allow completion of the physical portions of the act, with many deriving sufficient emotional satisfaction to act as a suitable balm.

*b. Physical Rehabilitation and Bracing.*—To care for himself completely, the paraplegic patient requires almost herculean shoulders and arms. In the first two weeks after injury, complete bed rest is advisable. Unless the anterior longitudinal ligaments of the vertebral bodies have been interrupted, extension can then be tolerated. The patient should be transferred to an exercise mat, preferably raised from the floor to ease the task of the therapist and instructors.[65] Flexion of the spine should be avoided during the period of bony healing. In general in cervical injuries, a Thomas collar or turnbuckle extension collar can be used instead of cranial traction after three weeks, although for many a Minerva jacket is best for periods up to four months. Some type of support is usually required for at least a year. For thoracic and lumbar injuries—without damage to the anterior longitudinal ligament—bracing in mild hyperextension is necessary until stability is evident. More care is required in patients with damage to the anterior longitudinal ligament and in those showing rapid recovery of function. Frequent roentgenographic check of the status of the bony alinement should be made. Obviously, if laminectomy has not been performed, initiation of activity must await evidence of bony healing. Push-ups, pull-ups in the prone position and gripping exercises should be instituted. With a graded exercise system such as that described by de Lorme,[66] it is possible to have almost every patient capable of supporting his weight with one arm in a period of six weeks. During this time, the patient is allowed in a wheel chair, provided that adequate bracing of the bony lesion is obtained. As soon as bony healing is demonstrated (and before in the patient with a proved anatomic transection), weight bearing should be allowed (fig. 5). This should be anticipated by enough time to allow measurement, manufacture and fitting of braces. For patients with ability to lock the knees, only drop foot braces should be used. For those unable to lock the knees, long leg calipers are needed. For patients with lesions above the tenth dorsal dermatome (best described as those unable to "hike" the hips), a pelvic extension brace may be needed. The subject of braces has engendered some bitter controversy.[67] Perhaps the most important point was missed. If the patient is required to support over 100 pounds (45 Kg.) of dead weight body, the addition of about 15 pounds (7 Kg.) of bracing "adds the straw that breaks the camel's back" and the patient soon abandons the trying effort. However, if the braces are light yet durable, he will put them to good use. To attain this goal, strapping should be minimal. A strap over the knee cap with another surrounding the upper leg is most usually adequate. A drop foot attachment is needed as is a good, easily workable knee lock. The best all-round brace available is the Klenzak brace, the parts of which, assembly apparatus and instructions are supplied by the Pope Foundation.[68] By keeping strapping down to a minimum and by making the brace easy to apply, one virtually insures continued use. If it requires help and much time to apply a brace, it will soon find its way to a corner to gather dust. Crutches should be sturdy and should be carefully measured for the individual patient. Sponge arm rests should be frowned on, since the crutches should not be used to support the body weight in the axillas. The crutch tips should be of suction type.

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[64] Paraplegic's Home Is Made to Order, Life, Jan. 13, 1947, pp. 59-60.

[65] Freeman, L. W.: The Ideal Hospital for Paraplegic Patients, Mil. Surgeon **103**: 219-226 (Sept.) 1948.

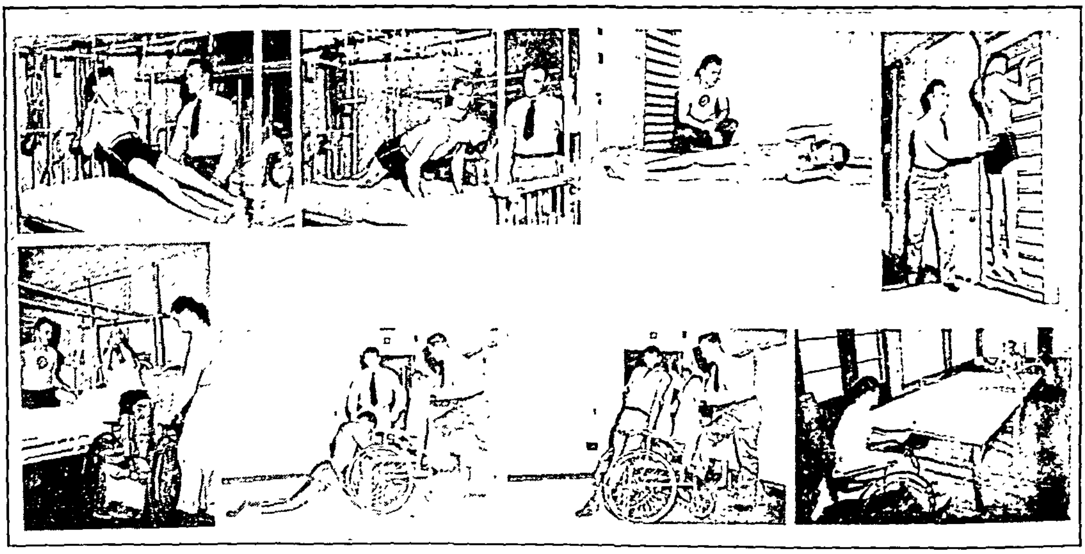

Fig. 5.—Phases in physical reconditioning of paraplegic patients (from Dr. J. C. White and Dr. T. I. Hoen).

*c. Ambulation.*—With the patient having reached the stage where weight can be borne on the extremities, the erect posture should be assumed between parallel bars. The bars should be adjusted to the level of the hand grips on the crutches. Here the patient learns balance and launches on the preliminary crutch-walking gaits of swing-to (feet dragged to standing position from a bent forward initial position) and swing-through (feet thrown ahead of vertical line of body by a pendular motion). With full length mirrors at each end of the walking ramp, the patient is taught balance without requiring direct observation of the position of his feet. During this period he begins balance exercises with crutches, learning to throw the crutches forward and backward, and to shift the position of the crutches and body from side to side. He then begins forward motion with the crutches, with men stationed before and behind to prevent his falling. The swing-to gait is first mastered and then the swing-through. These gaits are often sufficient for most patients with lesions above the tenth dorsal segment and may be the only ones which they can do (fig. 6). If the patient is able to "hike" his hips, he then starts with alternating gaits. From this point on, the development of ambulation is an individual matter. Few patients with lesions above the tenth dorsal segment will be able to put ambulation to good use in moving further than from room to room, but it must be reemphasized that the real purpose of ambulation is the prevention of urinary calculous formation and without it the patient has a limited life expectancy. It must be done daily for a minimum of one-half hour for the medical benefits alone. Some of these patients can accomplish navigation of stairs and curbs, thus having a good, useful means of loco-

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[66] (*a*) de Lorme, T. L.: Restoration of Muscle Power by Heavy Resistance Exercises, J. Bone & Joint Surg. **27:** 645-667 (Oct.) 1945. (*b*) Heavy Resistance Exercises, Arch. Phys. Med. **27:** 607-630 (Oct.) 1946.

[67] Deaver, G. G., and Callahan, J. J.: Discussion on Training in Walking, Transactions of Conference on Spinal Cord Injuries, Army Service Forces, Second Service Command, 1945, pp. 18-20, 27 and 29.

[68] Pope Foundation, Inc., Klenzak Braces, The Pope Foundation, Inc., 538 South Wells Street, Chicago 7, Ill.

motion. For those patients with lesions below the tenth dorsal segment, all expected obstacles are simulated and special attention given to each (such as street curbs). A useful guide for achievement is "What's My Score," put out by the Veterans Administration.[69] Attention must be given to the different types of surfaces to be met, and the patient must be taught how to get up from the ground alone. In line with this, he should be taught how to get in and out of a car alone, usually from a wheel chair. By using a light-weight folding wheel chair, the patient can accomplish this alone. He should be given careful driving instructions in a specially equipped automobile. In all phases of daily care, he must reach proficiency in full accomplishment without aid. If he is dependent on outside aid for anything, his activity is likely to be too restricted. Emphasis is placed on full self care.

*d. Educational Reconditioning.*—For some to attain the best possible vocation, further education is needed. Regardless of any other consideration, it is necessary that the vocation chosen be capable of achievement and be completely fitted to the patient's needs and abilities. As such, a full range of intelligence and aptitude tests should be given. With this information, it is possible to narrow the field of possible vocations. Having selected the proper one, one must remove all educational deficiencies. Many paraplegic persons are now in attendance at some of the country's leading colleges.

*e. Vocational Rehabilitation.*—As a continuation of the testing of aptitudes and selection of a vocation, the total range of vocational training must be assured. This includes ultimate placement. That such a goal is attainable is exemplified by the patients already mentioned and more so by the watch repair training offered by the Veterans Administration, which includes a year at the school of one of the leading watch companies. Again, the vocation must be fitted to the patient, not the patient to the vocation. These patients can then conduct themselves more favorably than those who entered their vocations by pure chance, without being properly fitted.

*f. Social Rehabilitation.*—This encompasses all phases of activity, but the major part of this will be automatic once bowel and bladder control are assured. However, communities must receive instruction in their duty to and attitude toward paraplegia. This largely consists of acceptance of the patient as a normal member, and not as some sort of pitiable freak. Active support may be required, but should not be done as a purely charitable venture. Since the expense of the entire program is so great, it is probable that only a government-financed center, open to veterans and civilians alike, can fulfil all requirements. Such a center would fail unless it had sympathetic support and was staffed by men with genuine interest.

### THE CIVILIAN PARAPLEGIC PATIENT

Repeated reference has been made to veterans and to the hospital facilities of the Veterans Administration. This is natural, as my principal experience has been with veterans of World War II in Army and Veterans Administration hospitals. Furthermore, present concepts of the proper treatment of the traumatic paraplegic patient and of his potentialities have been largely the result of experiences resulting from that war. However, I wish to avoid creating the impression that the problem of the care and rehabilitation of the paraplegic patient is exclusively or even predominantly one concerned with veterans. Nothing could be farther from the truth. Traumatic paraplegia, as well as paralysis of the legs resulting from other diseases of the spinal cord, such as myelitis, multiple sclerosis and tumors, is an enormous and ever present problem among civilians. Such injuries are all too frequent in mines, on farms and in factories. Although we now know how to treat patients who have been so injured, as has been outlined in the preceding pages, the facilities for such treatment are lacking for all except the veterans of World War I or II. No civilian hospital has either the equipment or the personnel to provide the treatment which these persons require, and few civilians could afford the months and years of such treatment which their condition requires even if it were available. It

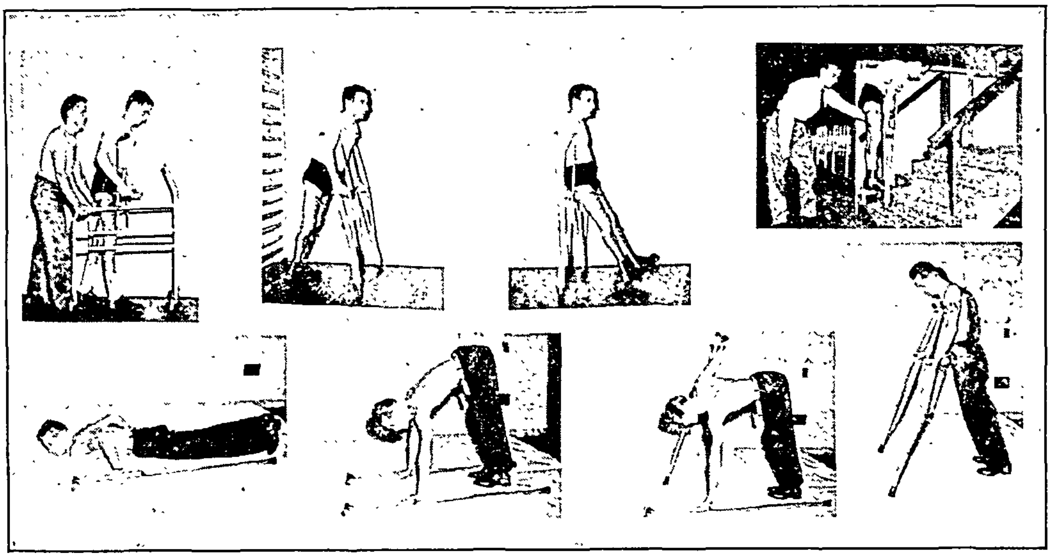

Fig. 6.—Some phases in ambulation of paraplegic patients (from Dr. J. C. White and Dr. T. I. Hoen).

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69. Veterans Administration, Central Office, Washington 25, D. C.

is important for the education, rehabilitation and maintenance of the proper morale of the paraplegic patient and for the maintenance and training of a proper attending staff of physicians, nurses and orderlies that the patients suffering from paraplegia be cared for in large groups in centralized hospitals scattered at strategic points throughout the United States. The expense of the care of such patients is so great that such hospitals cannot possibly be supported entirely by the patients themselves. The support of such institutions should be the joint concern of the patients, casualty insurance companies, industry, labor unions and the government. A beginning in the proper development of such centers has already been made by the Veterans Administration. These facilities could well be expanded to care for the civilian patient and financed by the interested parties previously designated. This is not a visionary plan incapable of prompt attainment. In fact, our good neighbor to the north, The Dominion of Canada, has, through the hospitals under the control of its Department of Veterans Affairs in collaboration with its university medical schools, already shown the way by establishing exactly the type of facilities outlined here. This program is already in full and successful operation there. There is no longer adequate justification of the failure of development of facilities for the care of the unfortunate civilians here.

It is to the great credit of our paraplegic veterans that they have taken the lead in the establishment of adequate care for the civilian paraplegic person who has not had the advantages that the hospitals of the Army, Navy and Veterans Administration have provided them. They are acutely aware of the handicaps, pains and discomforts associated with paraplegia; they know at first hand the intensive, persistent and expensive care which is essential if the paraplegic person is to live, be comfortable and to be rehabilitated to a socially and economically useful life; they know that without such care most paraplegic persons are condemned to death within a few months. To the end that this deficiency in the care of all paraplegic patients may be improved and advanced by study and research, the paraplegic veterans have organized The National Paraplegia Foundation. Its works and aims should be aided whenever and wherever possible.

### SUMMARY

A system of care of patients with injury to the spinal cord, based on personal observation on more than 720 cases is given. To this is added the judgment of outstanding civilian and military authorities with wide experience. The system is presented with the hope that many of the features which came to light during the last war will be put to use in civilian practice.

Emphasis is placed on the following features: (*a*) immediate first aid care of the patient, (*b*) reduction of the deformity of the spine, (*c*) frequent rotation of the patient to prevent decubitus ulcers, (*d*) prompt bladder treatment, (*e*) attention to protein balance, (*f*) care of the bowels and (*g*) psychologic aspects. Details are given for bladder care, bowel care, nutrition, psychologic aspects and ambulation.

Ambulation is stressed for its general health value and as the only certain means for prevention of urinary tract calcinosis. Rehabilitation is discussed as a means of reaching the ultimate goal, whereby the paraplegic patient accomplishes a reorientation to his disabled state and enters society again as a useful citizen.

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## Clinical Notes, Suggestions and New Instruments

### A FATAL REACTION TO METHAPYRILENE (THENYLENE®)

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BERL B. WARD, M.D.
and
M. L. HICKS, M.D.
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Methapyrilene hydrochloride is N,N-dimethyl-N'-(2-pyridyl)-N'-(2-thenyl) ethylenediamine hydrochloride (thenylene hydrochloride®, Abbott) and is an antihistaminic drug.

Since the antihistaminic drugs have become available to the members of the medical profession, both the lay press and many physicians have hailed these preparations as practically nontoxic and as the solution to most allergic problems. That present indiscriminate use of these antihistaminic agents needs a critical review is evidenced in the literature. Although we have found no report of a fatality, there have been serious reactions.

Roth and co-workers[1] from the Abbott Laboratories reported the pharmacologic properties of methapyrilene. On isolated portions of ileum in the guinea pig and rabbits, they demonstrated that this drug definitely prevented or abolished the spasm-producing activity of histamine. They also demonstrated its inhibitory action on anaphalaxis in the serum-sensitized guinea pig. The authors, in discussing acute toxicity in experimental animals, noted excitation followed by convulsions. In cats and dogs the respiratory acceleration was prominent. The course of events may be rapid or slow; depression may precede death, or death may result from respiratory arrest and convulsions.

Roth and associates[1] did not discuss any pathologic studies on the experimental animals which were killed by acute toxicity but did mention that, in a group of animals which received methapyrilene over a long period (eight months), pathologic studies revealed that the heart, kidneys, spleen, adrenal glands and digestive tract were essentially normal. The liver exhibited decided cloudy swelling.

Logan[2] stated that, in a series of 71 children who were treated for certain allergic diseases with diphenhydramine (benadryl®), undesirable side reactions occurred in 17, or an incidence of approximately 24 per cent. The reactions were chiefly drowsiness, vomiting, diarrhea, headaches and, in the case of one boy 3 years of age, who took 320 mg. of diphenhydramine hydrochloride over a period of three days, gross hematuria.

Horton[3] stated that Logan had recently seen a patient with an acute reaction to methapyrilene characterized by excitation and convulsions. Prompt gastric lavage was performed, and he believed that this procedure was largely responsible for the child's recovery.

Kierland and Potter,[4] in reviewing their experience with this drug, noted untoward reactions in 21 of 78 cases, or an incidence of approximately 27 per cent. The reactions consisted chiefly of drowsiness, dizziness, nausea, vomiting, headache and nervousness. The authors stated that serious toxic reactions had not occurred but that it was necessary to discontinue treatment in several cases.

Sternberg[5] observed side reactions in about 65 per cent of his cases. He reported in detail the history of a student nurse aged 22 in whom hysteria developed while she was taking diphenhydramine for hay fever. On withdrawal of the drug the hysterical episodes ceased, and she became normal and returned to work.

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[1] Roth, L. W.; Richard, R. K.; Everett, G. M., and Shepperd, I. M.: Pharmacological Properties of N,N-Dimethyl-N$^1$-(a-Pyridyl)-N$^1$-(a-Thenyl)-Ethylene-diamine Hydrochloride (Thenylene Hydrochloride) a New Antihistaminic Compound, Arch. internat. de pharmacodyn. et de thérap. **75:** 362-369 (Jan. 15) 1948.

[2] Logan, G. B.: The Use of Benadryl in the Treatment of Certain Allergic Diseases of Children, Ann. Allergy **5:** 105-112 (March-April) 1947.

[3] Horton, B. T.: Personal communication to the authors.

[4] Kierland, R. R., and Potter, R. T.: An Evaluation of Thenylene, Proc. Staff Meet., Mayo Clin. **23:** 48-51 (Jan. 21) 1948.

[5] Sternberg, L.: Unusual Side Reaction of Hysteria from Benadryl, J. Allergy **18:** 417 (Nov.) 1947.

Lott, Krug and Glenn[6] also noted an acute psychosis in the case of a woman aged 20 who was given tripelennamine (pyribenzamine®) orally to control a dermatitis due to either sulfadiazine or penicillin. The dose of tripelennamine hydrochloride was 100 mg. every four hours. The woman rapidly returned to normal after discontinuation of the drug.

Kern[7] reported that a woman aged 28 suffered fainting spells and severe prostration after taking 300 mg. of tripelennamine hydrochloride in equally divided doses, approximately eight hours apart.

In a recent article Sachs[8] reported a toxic reaction in a white man 28 years of age who was treated with 600 mg. of diphenhydramine hydrochloride daily for severe urticaria caused by penicillin. After two and one-half days there developed dizziness, dryness of the mouth, visual and olfactory hallucinations, mental confusion, tremor and jerky speech. Complete recovery of the patient occurred twelve hours after the discontinuation of the drug. The author reviewed the literature and stated that: (1) toxic reactions with therapeutic doses of the drug occur in 46.4 per cent of cases; (2) when diphenhydramine is given intravenously, toxic reactions occur in 65 per cent of cases; (3) the drug was discontinued in 6.4 per cent of cases because of toxicity; (4) toxic reactions are unpredictable because they may occur even with small doses on some occasions and not on others in the same case (reactions were more frequent, however, with higher dosages), and (5) toxic reactions are relieved by discontinuation of the drug. No cumulative effect was noted.

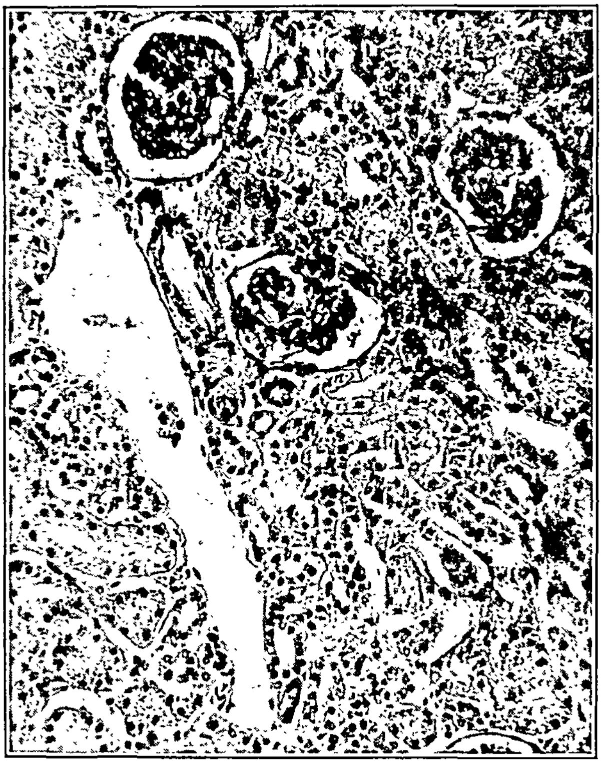
## REPORT OF CASE

We have recently seen a fatal reaction to methapyrilene.

*History and Clinical Course.*—The patient, a white girl aged 16 months, had been in good health prior to the present illness. Birth had been by normal spontaneous delivery. There was no history of serious illness during infancy or evidence of congenital abnormalities. Her physical and mental development was normal. At the time of the present illness, the patient's weight was 24 pounds (10.9 Kg.).

On March 28, 1949 the child accidentally ingested 100 mg. of methapyrilene hydrochloride at 9:30 a. m. At 11:30 a. m. there was projectile vomiting, followed by listlessness and a desire to remain quiet. Approximately 4 ounces (118 cc.) of milk were drunk without further vomiting. There followed occasional tetanic jerking of the extremities, climaxed by a severe clonic convulsion at 1:10 p. m. This lasted two to three minutes and was followed by a short period of consciousness. This was succeeded in four to five minutes by a continuous clonic convulsion. The patient was admitted to the emergency room of St. Joseph Mercy Hospital, where the convulsions were controlled by the inhalation of ether and oxygen. One grain of pentobarbital sodium was given intramuscularly. At the time of admission the pupils were widely dilated and there were extremely irregular movements of the eyes. Some muscular twitching of the arms and face persisted. The general condition was good, and 7.5 grains of chloral hydrate were given rectally. The pulse rate at this time was 92 per minute, and the respirations numbered 50 per minute. The subcutaneous administration of a 5 per cent solution of dextrose in water was begun. At 5 p. m. muscular twitching of the arms returned and breathing became more rapid and labored. There was a small amount of coffee-ground vomitus. The temperature was 105 F. (rectal). Seven and one-half grains of chloral hydrate were again given per rectum. The patient's temperature gradually rose to 107 F. (rectal), and there was a gradual increase in respiratory rate and some slowing of the pulse rate. Muscular twitching of the arms increased. A venesection was performed at 7:30 p. m., and an intravenous infusion of a 5 per cent solution of dextrose in water was begun. At this time the carbon dioxide combining power of the blood was 25 mg. per hundred cubic centimeters and the nonprotein nitrogen was 240 mg. per hundred cubic centimeters. Observations of the blood were otherwise essentially normal. One-sixth molar lactate solution was substituted for the dextrose to correct the acidosis. The patient had not voided since admission to the hospital. By catheterization only 20 cc. of urine were obtained. The urine was acid and gave a 2 plus reaction for albumin; there was no sugar or acetone; there were 1 to 2 white blood cells, 15 to 20 granular casts and 2 to 4 hyaline casts per high power field. The patient's condition remained static with the temperature varying from 105 to 107 F. (rectal), the pulse rate, from 90 to 100 per minute, and the respiratory rate, 40 per minute. At midnight respirations gradually increased to 50 per minute, and the pulse rate suddenly slowed to 50 per minute. The rectal temperature was 107.2 F. The pulse rate continued to slow, and the heart beat and respirations suddenly ceased at 12:40 a. m., approximately fifteen hours after ingestion of the methapyrilene.

*Necropsy Data.*—The necropsy was performed by Dr. E. T. Thorsness. The body was that of a well nourished white girl of 16 months. There were no evident physical abnormalities or congenital defects. The principal abnormalities were decided cortical edema of the brain and upper nephron nephrosis. (See the accompanying illustration.) The kidney section revealed degeneration and fragmentation of the cells of the proximal convoluted tubules. The glomerular spaces were increased in size as a result of obstruction in the proximal convoluted tubules. In addition, there were some cloudy swelling of the pancreas and liver, splenic congestion and edema of the lungs, with intra-alveolar hemorrhage. The diagnosis was acute poisoning due to methapyrilene.



Destructive lesions of glomeruli and proximal convoluted tubules of kidney (× 170).

## SUMMARY

The fatal poisoning of a healthy girl 16 months of age was caused by the accidental ingestion of 100 mg. of methapyrilene hydrochloride (thenylene hydrochloride®, Abbott). The principal features were nausea, vomiting and drowsiness, followed rapidly by excitation, tremors, convulsions and death. The principal abnormalities at autopsy were cerebral edema and what we term upper nephron nephrosis, with immediate anuria and tremendous rise of the nonprotein nitrogen.

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[6] Lott, G. N.; Krug, E. S., and Glenn, H. R.: A Case Report of Drug Delirium Clinically Interpreted as Being Due to Pyribenzamine, J. Lancet 48: 242 (Sept.) 1948.

[7] Kern, E. C.: Marked Toxic Side Effects of Pyribenzamine, J. M. Soc. New Jersey 44: 374 (Sept.) 1947.

[8] Sachs, B. A.: The Toxicity of Benadryl: Report of a Case and Review of the Literature, Ann. Int. Med. 29: 135 (July) 1948.

### CONCLUSIONS

1. A brief review of the literature indicates that toxic reactions occur with the therapeutic use of antihistaminic drugs in from 25 to 65 per cent of cases.
2. The altered physiology which produces these reactions is unknown.
3. Most of the reactions seem to be a result of cerebral irritation.
4. More observations should be made on the cerebral and renal lesions of animals which have been killed by a toxic dose of antihistaminic drugs.
5. There is no effective antidote for these drugs. The only treatment is withdrawal of the drug and symptomatic support of the patient.

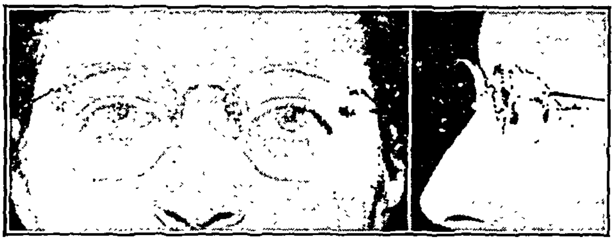
1200 Main Street.

## A MIRROR FOR PATIENTS WITH HEMIANOPSIA

ERIC BELL Jr., M.D.
Cleveland

Hemianopsia is relatively frequent among patients with intracranial lesions. Most of these defects are of the nature of a homonomous hemianopsia. Patients with this disability often complain of the repeated dangers and embarrassments which occur as the direct result of their restricted field of vision. They fail to see swiftly moving automobiles, they are afraid to gaze into shop windows because of the probability of colliding with other pedestrians and they fail to see the food passed to them at the dinner table. The complaint is usually worded thus: "If I only knew that something were approaching me on my blind side, I could turn my head and look over there—but I don't know when to look."

In an effort to find some gadget which would aid these patients in "knowing when to look," a simple device, consisting only of a small, oval mirror measuring about 1 by 2 cm., was affixed to the nasal portion of the inner aspect of the patient's glasses.[1] The size of the mirror must necessarily depend on the height of the patient's nasal bridge. A slightly convex surface to the mirror may be desirable. The best angle is approximately a right angle to the plane of the lens of the glasses. It should be attached to the metal frame near the nosepiece (see illustration).



Frontal and lateral views of glasses with mirror attached. Note the reflection of the pupil in the mirror.

Patients seem pleased with the resultant increase in their field of vision. When some movement occurs on their hemianoptic side, they often are able to catch a glimpse of this in the mirror and thus are prompted to turn their eyes in that direction. The position of the mirror has the added advantage that the farther a patient turns his eyes to his "good" side, the clearer and wider the reflection he sees from his hemianoptic segment of vision. Patients rapidly learn to interpret the glimpse with fair accuracy, so that material benefit may occur within a few weeks. Failure to attain benefit may indicate that the angle of the mirror should be changed. Variations of this basic device may be used for patients with other types of visual field defects.

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From the Cleveland Clinic and the Frank E. Bunts Educational Institute.

[1] Mr. L. V. Prohaska of the Precision Optical Company, Cleveland, rendered technical assistance.

# Council on Pharmacy and Chemistry

## WARNING

**Word has been received from Hoffman-La Roche, Inc., that a letter requesting the recall of Presidon has been forwarded to every physician and hospital in the United States. This drug is being recalled because of possible harmful effects on the blood.**

Austin Smith, M.D., *Secretary.*

## COUNCILS ON INDUSTRIAL HEALTH AND PHARMACY AND CHEMISTRY

*The following report has been authorized by the Council on Industrial Health and the Council on Pharmacy and Chemistry.*

Carl M. Peterson, M.D.
*Secretary, Council on Industrial Health.*
Austin Smith, M.D.
*Secretary, Council on Pharmacy and Chemistry.*

## PRESENT STATUS OF ALUMINUM IN THE THERAPY AND PROPHYLAXIS OF SILICOSIS

ERNEST W. BROWN, M.D.
Executive Officer to the Committee on Scientific Development and Education, Council on Industrial Health, American Medical Association
and
WALTON VAN WINKLE Jr., M.D.
Secretary, Therapeutic Trials Committee, Council on Pharmacy and Chemistry, American Medical Association

A conference of representatives of the Council on Industrial Health of the American Medical Association and of the McIntyre Research Foundation was held at Toronto, May 10, 1946, to exchange views between the two agencies regarding future activities of the McIntyre Research Foundation in the United States. The following program was formulated:

1. That the Councils on Industrial Health and on Pharmacy and Chemistry of the American Medical Association continue to evaluate all data available on the toxicology of aluminum.
2. That a conference be called between the two councils concerned and the McIntyre Research Foundation to discuss further the current status of the efficacy of aluminum in relation to the therapy and prophylaxis in silicosis and the licensing procedure now in operation.
3. That, if possible, a report be obtained on the experience gained in the aluminum treatment of miners at Timmons, Ontario.
4. That a complete report of the study of Dr. D. W. Crombie on the treatment of cases of tuberculosilicosis with aluminum be made available.

The conference proposed was held at the headquarters of the American Medical Association Oct. 31, 1946. This included representatives from industry where the aluminum procedure was in use, members of the two Councils, the Therapeutic Trials Committee and officials of the McIntyre Research Foundation. The consensus was that the licensing procedure entailed certain objections which were outweighed by other advantages, provided that licensing was not demanded of research personnel. Representatives of the two Councils agreed to undertake an inspection of a representative group of industrial installations for aluminum prophylaxis and therapy in the United States, as a means of reaching a more comprehensive conception of how the procedure was being applied and of determining whether any significant data for evaluation were available.

Definitions: The term, aluminum, as related to prophylaxis and therapy in this report signifies the finely divided preparation adopted by the McIntyre Research Foundation.[1] It consists of approximately 20 per cent metallic aluminum and 80 per cent aluminum oxide. Each particle is made up of a core of the metal surrounded by the oxide, 99 per cent of the particles being under 5 microns in diameter. Alumina is another term for aluminum oxide, which may exist in the amorphous or crystalline form. The white amorphous powdered material selected by Gardner, Dworski and Delahant[2] as the antidotal agent against silica dust is designated "alumina XH-1010." This is the dried state of a precipitated gelatinous form of aluminum hydroxide.

## PREVIOUS SURVEYS ON THE STATUS OF ALUMINUM THERAPY

Tabershaw and Tebbens[3] published a report in 1945 based on personal interviews and observation in various centers of the United States where aluminum was in use either as a prophylactic or therapeutic agent or both.

George[4] of Australia published an exhaustive report in 1946 of a visit to installations in Canada and the United States together with a general review of the subject.

King and Sutherland[5] of the Postgraduate Medical School, University of London, carried out conferences and inspections of the principal centers in the United States and Canada employing the aluminum process. This was conducted on the request of the Medical Research Council of Great Britain. They submitted a detailed but unpublished account of their observations at that time.

Dr. Lucien Brull[6] of the Institute of Hygiene of Mines of Belgium submitted to the institute in 1946 a report containing the results of his study regarding aluminum prophylaxis and therapy following a tour of industrial and other centers in the United States and Canada.

Dr. G. E. Hall,[7] formerly dean of the School of Medicine and now president of the University of Western Ontario, prepared an unpublished résumé in 1947 of the situation in Canada at the request of the Ontario Provincial Government. It contains a recommendation that a comprehensive independent study of the whole problem be undertaken by a government research organization.

Dr. A. R. Riddell,[8] of the Silicosis Referee Board of the Workmen's Compensation Board of Ontario, published in 1948 a paper in which he summarized the reports of various persons and groups who had visited certain of the numerous plants where aluminum therapy and prophylaxis are employed. Dr. Riddell is in general accord with the comments of these observers.

A review of these reports reveals general agreement with respect to the following points:

*Therapy.*—(1) A large proportion of silicotic patients who receive aluminum treatment claim total relief from subjective symptoms; (2) no convincing objective evidence of improvement either from clinical or radiologic records has been observed; (3) no adequate comparative control groups without treatment or with different treatment have been studied.

*Prophylaxis.*—(1) The results of confirmed laboratory animal experiments were so striking that application to man should also have been studied under scientifically controlled conditions; (2) mass prophylaxis should not have been introduced unless based on such experimental studies; (3) where aluminum has been administered for a considerable time to workers with previous prolonged exposure, there is no clear evidence that it will prevent progression; (4) it is too early for a conclusion as to whether administration of aluminum will prevent silicosis in persons receiving it from the beginning of exposure.

## POSSIBILITY OF ADVERSE EFFECTS OF ALUMINUM IN MAN

1. *Adverse Effects on the Normal Lung.*—Mass administration of aluminum has been in progress in the mines of Ontario for five to six years, involving many thousands of workers; also, in the majority of mines of British Columbia for roughly three years. It was begun in the United States in 1942, and there are now approximately fifty-five licensees employing the method. Nothing has appeared up to this time either in the literature or from any other source indicating that adverse effects have resulted from any of these applications.

No mention of harmful action is contained in the therapeutic studies of aluminum in silicosis of Crombie, Blaisdell and MacPherson,[9] Bamberger,[10] Wright,[11] Hannon,[12] Vrooman[13] and Berry.[14]

The Industrial Pulmonary Disease Committee of the Medical Research Council of Great Britain[15] in 1936 investigated both clinically and roentgenologically a group of 50 workers who had been exposed for a considerable period of years to the inhalation of alumina dust in high concentration in the reduction factory of the British Aluminum Company. No evidence of fibrosis of the lung or other pathologic effect was found as a result of this exposure. Attention is also invited to the fact[16] that for the past several years alumina has been substituted for quartz in the manufacture of china in British potteries. A relatively large number of employees have been exposed to the inhalation of considerable powdered alumina in this process, but no adverse physiologic effects appear to have been reported.

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[1] Robson, W. D.: Progress in Aluminum Therapy, Tr. Canad. Inst. Mining & Metallurgy **47**: 172-179, 1944.

[2] Gardner, L. U.; Dworski, M., and Delahant, A. B.: Aluminum Therapy in Silicosis: An Experimental Study, J. Indust. Hyg. & Toxicol. **26**: 211-223 (Sept.) 1944.

[3] Tabershaw, I. R., and Tebbens, B. D.: The Use of Aluminum in Silicosis Control, Indust. Med. **14**: 709-711 (Sept.) 1945.

[4] George, W. E.: Use of Different Types of Aluminum Powder in the Prevention and Treatment of Silicosis Together with a General Review of the Subject, Department of Labour and Industry and Social Welfare, New South Wales, 1946.

[5] King, E. J., and Sutherland, C. L.: Aluminum Treatment of Silicosis, Report to the Medical Research Council, Great Britain, 1946 [unpublished].

[6] Brull, L.: Inquiry into the Problem of Silicosis, Communication No. 9, Institute of Hygiene of Mines, A.S.B.L., Hasselt, Belgium, 1946, translated by S. J. Davenport and available from United States Department of the Interior, Bureau of Mines, Health and Safety Division, Washington, D. C.

[7] Hall, G. E.: The Use of Aluminum in the Treatment and Prevention of Silicosis, Report to the Deputy Minister of Health, Department of Health, Toronto, Ontario, 1947 [unpublished].

[8] Riddell, A. R.: Present Status of Aluminum Therapy in Silicosis, Bulletin 94, Discussion of Industrial Accidents and Diseases, United States Department of Labor, Division of Labor Standards, 1948, pp. 25-28.

[9] Crombie, D. W.; Blaisdell, J. L., and MacPherson, G.: The Treatment of Silicosis by Aluminum Powder, Canad. M. A. J. **50**: 318-328 (April) 1944.

[10] Bamberger, P. J.: Aluminum Therapy in Silicosis, Indust. Med. **14**: 477-479 (June) 1945.

[11] Wright, G. W.: Aluminum Dust Treatment for Silicosis, Bulletin 80, Discussion of Industrial Accidents and Diseases, United States Department of Labor, Division of Labor Standards, 1946, pp. 71-81.

[12] Hannon, J. W. G.: Aluminum Therapy in the United States, Tr. Canad. Inst. Mining & Metallurgy **47**: 180-184, 1944.

[13] Vrooman, C. H.: Silicosis as an Industrial and Compensation Problem in British Columbia, Dis. of Chest **14**: 63-72 (Jan.-Feb.) 1948.

[14] Berry, J. W.: Aluminum Therapy in Advanced Silicosis, Am. Rev. Tuberc. **57**: 557-573 (June) 1948.

[15] Report on a Clinical and Radiological Examination of Workers Exposed to Alumina Dust, Industrial Pulmonary Disease Committee, Medical Research Council; Lancet **2**: 1478-1480 (Dec. 19) 1936.

[16] Berry, J. W.: Personal communication to the author, May 7, 1949.

Crombie, Blaisdell and MacPherson[9] conducted a study of the records concerning the health of a group of 125 employees of the Aluminum Company of America who had been exposed to finely powdered aluminum for six to twenty-three years. No roentgen ray shadows attributable to aluminum or other evidence of injury was found in any case. Hunter and his associates[17] reported on a clinical and roentgenologic study of 92 duraluminum grinders in an aircraft factory who had been in an environment of alumina dust for one to fifteen years. There was no evidence that any disease of the trachea, bronchi or lungs had resulted.

Reports have appeared in the German literature by Goralewski and Jaeger,[18] Goralewski[19] and other investigators dealing with the examination of considerable numbers of workers who were exposed to aluminum dust in German war industries in World War II. Certain roentgenologic pulmonary changes and symptoms are reported, the pathologic picture being described as the "aluminum lung." The atmospheric concentration of aluminum was enormously high and the general environmental conditions very unfavorable in these plants. However, the evidence is not as yet convincing that aluminum was implicated. Follow-up studies[20] on these cases and the associated problem by British investigators have been in progress, but the findings are not yet available.

Whether or not alumina is a causative factor in Shaver's disease[21] is at present under investigation. The environmental conditions involve potential exposure to both alumina and silica fume, the alumina being dispersed in extremely small particles. The conditions are quite dissimilar to those prevailing in the therapeutic administration of aluminum. Decisive proof has not yet been obtained as to the exposure factor responsible for the disease.

The conclusion is justified that the administration of aluminum in the amounts used for therapy and prophylaxis is not harmful to the normal or the silicotic lung in the absence of tuberculous infection.

*Tuberculous Infection.*—Gardner, Dworski and Delahant[2] reported first that guinea pigs infected by inhalation of attenuated tubercle bacilli and exposed to heavy dosages of alumina displayed a transitory tendency toward the spread of the tuberculous foci but that later healing occurred without destruction of tissue. We are authorized by Dr. A. J. Vorwald,[22] Director of the Saranac Laboratory, to present the following unpublished data: Additional animal inhalation experiments have demonstrated that exposure to high concentrations of alumina for eight hours daily unfavorably influences resistance to tuberculosis, but subsequent studies, limiting treatment by inhalation to one-half hour daily, indicate that the alumina did not accelerate the course of a simultaneously developing benign experimental tuberculous infection.

However, in a similar experiment with aluminum for one-half hour daily, the tuberculosis showed a tendency to spread. Therefore there appears to be a difference between aluminum and alumina in that the former tends to stimulate the development of tuberculosis in the experimental animal while the latter does not have this action.

These observations lead to the question: Is there any specific evidence at present that inhalation of aluminum by man will activate a latent tuberculous lesion or exacerbate an active tuberculous infection? In view of this possibility, the McIntyre Research Foundation has stipulated from the beginning, both in Canada and the United States, that tuberculosis be ruled out in the case of all workers before commencing treatment with aluminum, whether prophylactic or therapeutic. Crombie[20] of the Queen Alexandra Sanatorium, Ontario, treated eight silicotic patients with the definite complication of tuberculosis, the patients inhaling aluminum for fifteen minutes every other day for two months. The inhaled concentration corresponded to that prescribed in the therapeutic study of Crombie, Blaisdell and MacPherson.[9] Crombie is of the opinion that no effect—favorable or unfavorable—on the tuberculous infection resulted. The number of cases in this series is statistically too small to justify a definite conclusion.

We are not aware of any other concrete data on this debatable point. However, the following comment from Dr. W. D. Robson,[23] chief medical director of the McIntyre Research Foundation of Canada, is pertinent: ". . . it is my confirmed opinion, which agrees with Dr. Crombie, that our aluminum powder in the amounts used for both types of treatment has no effect one way or the other on this condition. This information is based on personal interviews with various examining doctors throughout Canada over the period of the last four years." Information has also been received from Dr. J. W. G. Hannon,[24] medical director of the foundation in this country, that no reports have come to his attention indicating an adverse influence on tuberculosis of treatment with aluminum.

If the results of experimental animal studies were applicable to man, the use of alumina would not unfavorably influence early tuberculosis but use of aluminum might be contraindicated. At present the possibility of detrimental action is not supported by statistical evidence and therefore is neither proved nor disproved. However, nothing has developed which would alter our position that great care should be taken to exclude tuberculosis in selecting persons to receive treatment with aluminum.

## PRESENT STATUS OF ALUMINUM THERAPY IN SILICOSIS

Groups of patients have been treated by Crombie, Blaisdell and MacPherson,[9] Bamberger,[10] Wright,[11] Hannon,[12] Robson,[25] Vrooman[13] and Berry.[14] Unless otherwise specified, aluminum was administered by these various observers. Crombie and associates reported clinical improvement in 55 per cent of 34 cases. Hannon found relief of subjective symptoms in 94 per cent of those with disability and 89 per cent without disability. Bamberger reported subjective improvement in 49 per cent of his patients, 11 being given aluminum and 24 alumina. Wright recorded that 35 per cent of his 36 subjects claimed amelioration of symptoms, part receiving aluminum and the remainder alumina. Robson in 1943 and 1944 tested a group of 39 underground miners and 14 surface men and reported relief in 68 per cent of the total of such symptoms as dyspnea, cough, pain and tightness in the chest. Vrooman carried 23 patients through a complete course of treatment and noted that 57 per cent claimed betterment of condition.

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[17] Hunter, D.; Milton, R.; Perry, K. M. A., and Thompson, D. R.: Effect of Aluminum and Alumina on the Lung in Grinders of Duraluminum Aeroplane Propellors, Brit. J. Indust. Med. **1**: 159-164 (July) 1944.

[18] Goralewski, G., and Jaeger, R.: Remarks on the Clinical Pathology and Pathogenesis of the Aluminum Lung, Arch. f. Gewerbepath. u. Gewerbehyg. **11**: 102-105 (Oct.) 1941; abstracted, J. Indust. Hyg. & Toxicol. **25**: 36 (Feb.) 1943.

[19] Goralewski, G.: Further Knowledge on the Clinical Picture of the Aluminum Lung, Deutsches Tuberk.-Bl. **17**: 3-10 (Jan.) 1943.

[20] Crombie, D. W.: Personal communication to the author, Dec. 10, 1948.

[21] Shaver, C. G., and Riddell, A. R.: Lung Changes Associated with the Manufacture of Alumina Abrasives, J. Indust. Hyg. & Toxicol. **29**: 145-157 (May) 1947.

[22] Vorwald, A. J.: Personal communication to the author, Dec. 20, 1948.

[23] Robson, W. D.: Personal communication to the author, Jan. 15, 1949.

[24] Hannon, J. W. G.: Personal communication to the author, May 7, 1949.

[25] Robson, W. D.: Personal communication to the author, March 4, 1949.

The recent study of Berry merits special emphasis in this review. Prior to his work the appraisal of aluminum as a therapeutic agent had been complicated by the concurrent lack of adequate control groups of men to whom a placebo was administered in the form of air free from aluminum by means of the same technic as applied to the test groups. Berry's treated group consisted of 26 persons with silicosis. "Alumina XH-1010" was employed, the men receiving on the average a total of one hundred and thirty treatments, extended over a period of one year. The concentration of alumina was 300,000,000 particles per cubic foot, and the particles averaged 1 to 3 microns in diameter. The control group was made up of 16 persons with silicosis who were administered air free from alumina but were under the impression throughout that they were under treatment identical with that of the test subjects. Subjective improvement was claimed by 85 per cent of the treated group and by 100 per cent of the control group. Berry points out that while final conclusions cannot be reached from a comparative study of such a small series, it does stress that this type of control study is of the greatest importance.

The question naturally follows: Has convincing evidence of objective improvement been revealed along with the subjective relief of symptoms, such as significant gain in pulmonary function and regression of roentgen ray findings? Crombie, Blaisdell and MacPherson[9] reported that improvement in respiratory function was shown by one third of their treated patients. Wright[11] found that only 5 per cent of his group of 36 treated patients showed eventual benefit based on increase in pulmonary capacity. In both of these studies, the numbers involved were too limited to be of statistical significance.

We are not aware of any report of regressive change in roentgenologic classification resulting from the aluminum treatment of silicotic persons with the exception of 2 observed by Vrooman.[13] In one instance, nodulation largely disappeared in the roentgenogram; in the other, the change was complete. These effects are apparently not due to altered roentgenologic technic. On the other hand, progression has been found subsequent to therapy; this is discussed later in this report. There is no rational basis on which regression of the mature hyaline silicotic nodule could be postulated as a result of treatment with aluminum. It has not been demonstrated in laboratory animals.[22]

The present consensus is that the relief of subjective symptoms and better morale observed in silicotic persons following aluminum therapy are of psychologic origin and not the result of any favorable organic changes. We have heard the opinion expressed that the treatment, even if the effects are purely psychologic, would be justified on the basis of the promise of improved morale, restored working efficiency and better industrial relations. This entails the question how long the relief of symptoms persists after a course of treatment. Specific data concerning this aspect have not come to our attention.

### PRESENT STATUS OF ALUMINUM IN THE PROPHYLAXIS OF SILICOSIS

Aluminum prophylaxis will be considered from two standpoints; i. e., (1) prevention of silicosis in man free from roentgenologic evidence of the disease at the time when the procedure was begun and (2) prevention of progression as demonstrated by the roentgen ray when present at the start of aluminum administration.

*Fundamental Laboratory Animal Studies.*—Silicosis acquired new interest with the announcements by Denny, Robson and Irwin,[26] in 1937 and 1939, that it could be prevented by the inhalation of powdered aluminum. Gardner, Dworski and Delahant[2] reported in 1944 that alumina when inhaled would also inhibit the toxic action of silica dust on the lungs. The following statement is quoted from this paper: "As far as animals go, it may be said that confirmed experimental evidence proves beyond question that both aluminum and alumina specifically inhibit the toxic action of quartz, and that their administration will prevent progression of silicotic lesions and cause regression of immature lesions."

Subsequent unpublished research at the Saranac Laboratory[22] has led to the following conclusions, partly confirmatory and partly new:

(*a*) In animals inhaling alumina for one-half hour daily and then exposed to a high concentration of silica of 700,000,000 particles per cubic foot for seven and one-half hours daily, there is definite evidence of inhibition of the toxic action of quartz, but the protection is not absolutely complete, as microscopic cellular nodules occur in the lungs, some with necrosis and a few with early fibrous change. Comparable experiments with aluminum also show protection against quartz, but it is significantly not as effective as with alumina.

(b) In animals exposed to free crystalline silica, treatment with aluminum may cause retrogression of the early immature inflammatory lesion, provided the agent comes in contact with the silica prior to the advent of fibrosis. It has no effect on the mature hyaline silicotic nodule.

*Aluminum Prophylaxis in Man.*—On the basis of the animal studies of Denny, Robson and Irwin,[26] McIntyre Research Limited (now the McIntyre Research Foundation) was organized in Canada in 1939 with the object of controlling by patent the use of aluminum in the therapy and prophylaxis of silicosis in all countries. Mass administration was begun in the mines of Ontario in 1943, conducted in the change houses, so that virtually all workers are included. On the other hand, the aluminum powder is dispersed in individual treatment mills in the United States and is therefore on a voluntary basis. In view of the periods estimated for the development of silicosis in the various industries under present conditions, the consensus is that it is too early to expect results as to the efficacy of the method in workers receiving the treatment from the beginning of silica exposure.

Roentgen Evidence: Has any roentgen evidence accumulated with respect to the prevention of progression of silicosis by administration of aluminum? We have been informed by Dr. Riddell[27] of the Silicosis Referee Board of Ontario that in some of the mine workers the disease is progressing as shown by roentgenologic examination despite continual administration of aluminum, and in certain workers it has progressed on to definite silicosis since the beginning of the aluminum procedure. However, these men had various periods of exposure prior to commencing treatment. Systematic statistical data are not yet available. It should be mentioned that all mine workers are subject to an annual periodic examination by radiologists of the Workman's Compensation Board of Ontario.

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[26] Denny, J. J.; Robson, W. D., and Irwin, D. A.: The Prevention of Silicosis by Metallic Aluminum: Preliminary Report, Canad. M. A. J. **37:** 1-11 (July) 1937; The Prevention of Silicosis by Metallic Aluminum, ibid. **40:** 213-228 (March) 1939.

Information has also been received from Dr. Riddell[28] concerning roentgenologic progression in 43 miners who had been therapeutically treated with a varied amount of aluminum by Crombie and associates[9] during the years 1940 to 1942, inclusive. On roentgenologic examination of 39 of these men in December 1945 by Dr. Riddell, 41 per cent presented extension of silicosis. Another group of 39 underground miners already referred to as treated by Dr. Robson,[25] of the McIntyre Research Foundation, were examined in 1943 and 1944. In 1942 these were presilicotic with the exception of 4 who were classed as having early silicosis. Thirteen, or 33 per cent, had moved to a higher roentgenologic category in December 1945.

As Dr. Riddell pointed out, the numbers involved in these groups are small and do not as yet warrant definite conclusions. The fact, however, is established that progression of silicosis did occur eventually after treatment with aluminum in these groups. It should be stated that the therapeutic dosage is stipulated as fifty times the prophylactic, but these findings do not exclude the possibility that still higher dosages might halt progression. Treatment has necessarily been conducted on an arbitrary basis, as there is no experimental basis in man by which to select optimum dosage.

### CRITERIA FOR RESEARCH IN EVALUATION OF ALUMINUM PROPHYLAXIS IN INDUSTRY

The opinion has been expressed from various sources that the decision of the McIntyre Research Foundation to introduce aluminum prophylaxis on a mass scale in industry should have been deferred, pending scientifically controlled research in man. This implies a consideration of (1) the main criteria involved in such research and (2) the feasibility of applying such criteria under industrial conditions.

*Control Groups.*—Control groups require precisely the same clinical and roentgenologic observation and record keeping as the test personnel. The selection of such groups should be unrestricted and made on the basis of adequate numbers, age and previous and present occupational exposure, in comparison with those of the treated workers. The selection of individuals to compose the two groups should be made in accordance with accepted statistical technics.

*Silica Dust Exposure.*—Dust counts, particle size and free silica analyses should be done at sufficiently frequent intervals to insure an accurate recording of exposure conditions. The determination of free silica in mixed dust should preferably be conducted by the roentgen ray diffraction method, which insures accurate analysis regardless of the size of the particles.

*Roentgenologic Data.*—Roentgenologic examinations must be of such a standard that roentgenograms are satisfactorily comparable year by year. This will demand an acceptable uniform technic in all plants included in the study.

*Period Essential for Such an Experiment.*—This would be contingent on the time required to produce silicosis in any particular industry under the engineering conditions of dust control maintained. Another variable relates to individual susceptibility. The protective mechanism against silica is so subnormal in some men that they begin to show roentgenologic evidence early in an environment apparently safe for most workers. Making due allowance for isolated cases where effective dust control may be impracticable, we must think in terms of ten, twenty or thirty years as the probable exposure time necessary for the development of silicosis in the great majority of men previously unexposed.

*Organization of an Experiment in Industry.*—This will require the services and facilities of some permanent research group—for example, an independent research agency or foundation, or a university research unit—the McIntyre Research Foundation to function in cooperation with such an organization. This would require a full time field unit made up of medical and industrial hygiene personnel, with a continuing group of roentgenologists available at headquarters and facilities for the assembling and analysis of statistical data. One would also be confronted with the considerable problem of securing funds for a project over a prolonged period of indefinite duration.

*Feasibility of Such an Experiment in Industry.*—It appears doubtful that selected control groups would ever be available in industry. The objections which both management and labor would raise to a frankly experimental plan to continue from ten to twenty years are too obvious even to mention. Even with full employee participation authorized, motivation would be lacking except possibly through financial reward. Absenteeism and turnover would also be deterrents.

Another imponderable is dosage. There is at present a complete lack of knowledge as to what proportion of aluminum actually reaches the pulmonary alveoli in man and becomes effective. The present dosage was adopted by extrapolation on the basis of Irwin's findings that 2 to 7 per cent of aluminum powder inhaled by rabbits was retained in the lungs after exposure to a known and constant concentration over a period of several months. Silicosis is a chronic disease produced only by many years of significant exposure to silica dust. It would be wholly impracticable to determine the effective prophylactic dose by repeated controlled trial and error, as might be feasible if an acute disease of relatively rapid development were under investigation.

Still another consideration is the possible effect of improved dust control. The McIntyre Research Foundation has stipulated that the introduction of aluminum prophylaxis is contingent on improved silica dust control to be maintained consistent with the generally accepted standards. If the incidence of silicosis were found experimentally to be of a negative order in both control and test groups, the result in both would be ascribed to dust control and no knowledge would be gained as to the aluminum factor.

On the basis of the foregoing discussion, it is not believed that a scientifically controlled experiment in industry on the aluminum prophylaxis of silicosis would be feasible except under the following conditions: (1) where silicosis would be expected to develop in a majority of the workers in a comparatively short period—for example, not exceeding five years—resulting from a situation in which efficient engineering dust control was impracticable and (2) where an adequate number of exposed personnel would be available as a control group.

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[27] Riddell, A. R.: Personal communication to the author, Feb. 8, 1949.
[28] Riddell, A. R.: Personnal communication to the author, Feb. 25, 947.

*Present Status of the McIntyre Research Foundation.*—As the work is at present organized, there is no certain prospect of any future evaluation of aluminum prophylaxis. One of the main reasons is the lack of control groups for comparable study. Although such are probably not available in industry, as already discussed, it has been suggested that workers classified as refusing treatment be utilized as control subjects. The number of such personnel may be considerable. Dr. Herring,[29] medical director of a group of six potteries of East Liverpool, Ohio, and vicinity, reported that 338 men, free from silicosis, refused to receive aluminum prophylaxis over a three year period, all men being continuously employed during this time. We have also been informed [30] that 577 employees distributed through four silica brick plants in Pennsylvania where aluminum prophylaxis is in operation declined to receive prophylaxis over approximately the same period.

Could a sufficient number of selected men be induced to volunteer for the control phase, fully cooperating in the clinical and roentgenologic examination as required for the treated groups? It appears unlikely that many men could be relied on for sustained cooperation. The reasons impelling them to decline treatment would also tend to prevail in relation to a control program. Moreover, the utilizing of men in this category would entail disadvantages in contrast to a control group freely selected as such. As already emphasized, the groups should be reasonably comparable in distribution as to numbers, age and past and present occupational exposure. The control of these factors might be entirely inadequate if the subjects were limited to those refusing treatment. However, if such men were willing to consent only to periodic roentgenologic examination and to supply data on their occupational histories, it would be worth while. This possibility should be fully explored.

The following action is essential if the McIntyre Research Foundation is to solve the aluminum prophylaxis problem: (*a*) Select an industry for the experiment, if available, where there is still a hazard of silicosis despite modern engineering methods of dust control and where the disease would develop within approximately five years. (*b*) Conduct a comprehensive survey in that industry in order to determine whether an adequate and properly selected number of control subjects would be available from workers declining aluminum administration. (*c*) If satisfactory control groups can be obtained, take steps to staff the foundation with the necessary facilities and full time research personnel to organize and conduct the study.

*Accomplishments of the McIntyre Research Foundation.*—The foundation has made significant contributions to occupational hygiene by requiring its licensees to install and maintain adequate dust control in accordance with modern accepted standards and by stipulating that medical departments be organized in all such plants, staffed with industrial physicians and nurses.

Another important result is the demonstration that aluminum is not harmful to the normal and silicotic human lung in amounts given for therapy and prophylaxis of silicosis. While no statistical report on this aspect has come to our attention, the fact is generally known that mass administration in Canada and the United States involving many thousands of men has been negative with respect to the possible toxicity of aluminum. While statistical data are not as yet available concerning the possible adverse effect of aluminum in relation to early tuberculosis in man, the present impression from its widespread use is that it has no effect one way or the other in the amounts used for either prophylactic or therapeutic administration.

## SUMMARY

1. Studies on the therapy of silicosis thus far have been inadequately controlled. The majority of subjects have reported subjective improvement, apparently of psychic origin. No convincing evidence of objective improvement either of pulmonary function or by roentgen ray has been forthcoming. Certain cases have shown eventual progression by roentgen ray subsequent to aluminum therapy under present conditions of dosage.

2. It is too early to expect evidence of the effectiveness of aluminum prophylaxis in men who do not have a history of exposure to silica dust prior to the beginning of the treatment. It is a fact that certain Canadian miners with a history of previous exposure have shown roentgenologic progression despite treatment with aluminum, although statistical data are not as yet available.

3. Aluminum is apparently not harmful to the normal or silicotic human lung in the dosages given for the therapy and prophylaxis of silicosis. Whether or not it increases susceptibility to tuberculosis is unproved. As far as we can ascertain the mass administration of aluminum in the United States and Canada over the past five to six years has not had an unfavorable effect in this respect, although again statistical data are not yet provided. However, great care should be taken to exclude the tuberculous in selecting persons to receive aluminum therapy.

4. It is not believed that a scientifically controlled experiment in industry is feasible for the evaluation of aluminum for the prophylaxis of silicosis. This follows from the uncontrollable variables inherent in the industrial situation and other factors which have been discussed. For these reasons, it appears improbable that any research agency would consider it advisable to undertake such a project except under special conditions already discussed, and which may not be attainable.

5. The McIntyre Research Foundation, as presently organized, is not equipped to solve the aluminum prophylaxis problem in relation to silicosis. The steps considered necessary to accomplish this objective are outlined.

6. Research should be continued with laboratory animals with the object of finding a more adequate basis for application to man. Such study is now included in the program of the Saranac Laboratory of the Trudeau Foundation.

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[29] Herring, E. F.: The Place of Aluminum Therapy in Silicosis Control, read before the Industrial Hygiene Section, West Virginia Public Health Association, Huntington, W. Va., Ma [illegible]

[30] Data from questionnaires received from [illegible] American Refractories, and two plants of the [illegible] pany, June 1947.

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SATURDAY, JULY 23, 1949

## Q FEVER

Q fever is an acute specific rickettsial disease of man characterized by a high grade fever, headache and malaise; often the disease is misdiagnosed as influenza or atypical pneumonia. Davis and Cox in Montana recovered the causative agent of Q fever from the tick, Dermacentor andersoni, several years before the disease itself was recognized. In Australia, Derrick in 1937 reported 9 cases of a new condition occurring in Queensland, which he named "Q fever." Eight of the 9 patients were slaughterhouse workers. The causative agent was named Rickettsia burneti after Burnet, who isolated the organism and recognized it as a rickettsia. Dyer demonstrated that Rickettsia diaporica, described by Cox, was similar to the causative agent of the Australian disease and was serologically and immunologically identical. Because of certain variations and because the causative agent of Q fever shows greater resistance to physical and chemical agents than other rickettsiae, the organism of Q fever represents a new genus, Coxiella; hence Coxiella burnetii supersedes R. burneti and R. diaporica.

According to Dyer[1] the belief that the name Q fever was given the disease because it was first described in Queensland, Australia, is erroneous; the name Q fever was given to the disease by Derrick, "Q" standing for "Query."

The disease has been found in the United States in Texas, Illinois, Montana, Arizona and California. Q fever outbreaks occurred in United States Army troops in Italy and Corsica. The disease was also reported from the Balkans, Switzerland and Panama.

During March 1946, an explosive outbreak occurred in Amarillo. The disease, according to Topping and co-workers,[2] affected primarily those engaged in killing the animals and handling the freshly killed meat. While the cattle can be infectious for stock handlers, the cattle themselves did not appear ill or exhibit any remarkable gross pathologic conditions during processing. The diagnosis, as reported by Irons and co-workers[3] was established primarily on the basis of laboratory procedures, with particular reference to increasing complement fixation titers during convalescence and after recovery. The Amarillo epidemic of Q fever represents the first sizable outbreak of this disease acquired naturally in the United States. With serums obtained in convalescence, results of complement fixation tests and rickettsial agglutination tests almost without any exception were positive for Q fever. The cases were similar except for wide variations in the severity of the illness, which ranged from mild influenza-like attacks to grave illnesses with 2 deaths among a total of 55 persons affected. Characteristic of the disease was an abrupt onset associated with frontal headache, chilly sensations and general malaise, fever of five to fifteen days' duration, essentially normal white blood cell count, roentgenologic evidence of pulmonary lesions, with minimal symptoms and physical signs referable to the respiratory tract, and comparatively rapid convalescence. Cutaneous manifestations were not observed. The serologic studies indicated that the illnesses were Q fever. A similar outbreak of more than 30 cases occurred in August 1946 among men working in the sheep and calf-killing department of one of the largest packing houses in Chicago.

Reports comprising clinical data on 625 cases were collected from six countries. The pathologic changes were found, in an analysis by Huebner and co-workers,[4] to have been caused in each instance by C. burnetii. The average incubation period was sixteen to eighteen days, with a minimum of thirteen days and a maximum of thirty-two days. Fever was the most consistent sign of the disease. Headaches were recorded in more than 90 per cent of the cases. The almost complete absence of abnormal changes in the upper respiratory tract in Q fever provides an important aid in differentiating that illness from such common illnesses as influenza, common cold, sinusitis and throat infections. All the usual blood serum agglutination tests were negative in result, including the Weil-Felix test and tests for brucellosis and typhoid. Reactions to cold agglutination tests were consistently negative, as were those to complement fixation tests for influenza, psittacosis and rickettsial diseases other than Q fever.

The disease has been found in California in sixteen counties in less than one year. In Los Angeles County, where Q fever appears to be endemic, more than 300 cases and 3 deaths have been studied. C. burnetii was present in the raw milk supply of four of five widely separated dairies in the Los Angeles area. The role that infected milk may play in human infection has not been determined. Two thirds of the patients so far studied did not use raw milk, nor was it used in their households. The mode of infection therefore must be other than personal or household use of raw milk. Proximity to livestock, however, appears to influence the occurrence of illness. The great majority of reported cases have occurred in adult males. On the basis of actual recovery of C. burnetii, human beings, cows, goats, sheep, bandicoots and ticks can be regarded as known natural reservoirs of Q fever. C. burnetii has been recovered from blood, urine and sputum of persons ill with Q fever. Despite these observations, infected persons are not apparently a source of human infections; indeed, there is much evidence to the contrary.

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[1] Dyer, R. E.: Q Fever: History and Present Status, Am. J. Pub. Health **39:** 471-477 (April) 1949.

[2] Topping, N. H.; Shepard, C. C., and Irons, J. V.: Q Fever in the United States: I. Epidemiologic Studies of an Outbreak Among Stock Handlers and Slaughterhouse Workers, J. A. M. A. **133:** 813-815 (March 22) 1947.

[3] Irons, J. V.; Murphy, J. N., Jr., and Wolfe, D. M.: Q Fever in the United States: III. Serologic Observations in an Outbreak Among Stock Handlers and Slaughterhouse Workers, J. A. M. A. **133:** 819-821 (March 22) 1947.

[4] Huebner, R. J.; Jellison, W. L., and Beck, M. D.: Q Fever—A Review of Current Knowledge, Ann. Int. Med. **30:** 495-509 (March) 1949.

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## HEALTH EDUCATION OF THE PUBLIC

Attention was called in THE JOURNAL last week to significant changes in the Principles of Medical Ethics adopted by the House of Delegates of the American Medical Association at its meeting in Atlantic City this year. Among the most important of the changes and additions are those related to education of the public regarding health and disease and dissemination of information to the public regarding medical affairs in general. The Principles of Ethics previously covered this aspect of medical relations to the public, by this statement in chapter III, section 4, on advertising:

> . . . It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self laudations defy the traditions and lower the tone of any profession and so are intolerable. . . .

Also under chapter IV, section 1, appeared the statement:

> Physicians, as good citizens and because their professional training specially qualifies them to render this service, should give advice concerning the public health of the community. . . .

Again, under section 2:

> Physicians, especially those engaged in public health work, should enlighten the public regarding quarantine regulations; on the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; and concerning measures for the prevention of epidemic and contagious diseases. . . ..

And in section 3:

> Physicians should warn the public against the devices practiced and the false pretensions made by charlatans which may cause injury to health and loss of life.

In the Principles of Ethics as now revised these subjects are covered in the following statements:

> Chapter I, section 4:
> Among unethical practices are included the not always obvious devices of furnishing or inspiring newspaper or magazine comments concerning cases in which the physician or group or institution has been, or is, concerned. Self laudations defy the traditions and lower the moral standard of the medical profession; they are an infraction of good taste and are disapproved.

The distinction between material of this type and legitimate health education of the public is covered in the new Principles of Ethics in a much more elaborate statement, in chapter I, section 5, entitled "Educational Information Not Advertising," which follows:

> Many people, literate and well educated, do not possess a special knowledge of medicine. Medical books and journals are not easily accessible or readily understandable.
>
> The medical profession considers it ethical for a physician to meet the request of a component or constituent medical society to write, act or speak for general readers or audiences. The adaptability of medical material for presentation to the public may be perceived first by publishers, motion picture producers or radio officials. These may offer to the physician opportunity to release to the public some article, exhibit or drawing. Refusal to release the material may be considered a refusal to perform a public service, yet compliance may bring the charge of self seeking or solicitation. In such circumstances the physician should be guided by the decision of official agencies established through component and constituent medical organizations.
>
> A physician who desires to know whether, ethically, he may engage in a project aimed at health education of the public should request the approval of the designated officer or committee of his county medical society.
>
> The most worthy and effective advertisement possible, even for a young physician, especially among his brother physicians, is the establishment of a well merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of simple professional cards is approved in some localities but is disapproved in others. Disregard of local customs and offenses against recognized ideals are unethical.
>
> The promise of radical cures or boasting of cures or of extraordinary skill or success is unethical.
>
> An institution may use means, approved by the medical profession in its own locality, to inform the public of its address and the special class, if any, of patients accommodated.

This section is a recognition of the extent to which the medical profession is already engaged in education of the public regarding health and disease. Many medical societies now conduct radio programs in which physicians speak and are introduced with reference to their names and the positions that they hold. Many medical organizations publish pamphlets by the thousands or millions, and these are widely distributed to the public. These pamphlets carry the names, addresses and qualifications of the physicians who prepare them. *Hygeia,* the magazine published by the American Medical Association for education of the public, does not hesitate to include the names of physicians who contribute articles and personal information concerning them to indicate their qualifications. Many physicians, including both those in and out of practice, now write magazine articles and books for education of the public, and these books have large circulation. The contrast between the conditions that prevail today and those that existed as late as twenty-five years ago is startling and represents a complete change in the point of view of the medical profession on the difference between education of the public and the use of public information to promote the practice of an individual physician.

Medical practice has become so largely centered in the hospital that these institutions also have felt the pressure of the public for information not only concerning health and disease in general but concerning patients who enter the hospitals and whose conditions may be matters of public importance. Most large hospitals now have officials who devote their time to the public relations of the institution. Leaders in medicine recognize the necessity for information to the public regarding unusual conditions that may come to public notice or even the health of persons who are considered "newsworthy."

The limitations necessary to prevent infractions of medical ethics and good taste are clearly stated in the revised Principles of Ethics. The physician may always secure from the appropriate committee of his local medical society a decision as to whether or not any activity leading to public notice is within the bounds of what is considered decent or ethical. Institutions which propose to extend their influence on the local community may likewise have access to authoritative sources for advice or guidance. Once more the responsible officials of medical organizations who undertake to advise or guide or decide in matters of this type are cautioned to make their decisions on the basis of good experience and common justice. All should be aware of the possibility that the Principles of Ethics and the mechanisms established by medical organizations to make them effective may be used or abused by individual physicians or others who endeavor to employ the Principles and the mechanism as a means of satisfying their envy or their enmity toward other physicians or medical institutions.

## Current Comment

### DR. ALBERT SCHWEITZER—HUMANITARIAN

Universities, the press and various organizations are honoring Dr. Albert Schweitzer for his accomplishments in music, medicine and other fields. Eminent as an authority on Goethe and Bach and as a scholar for his interpretations of religion, Dr. Schweitzer also is well known as a physician who for over thirty years has treated the sick in French Equatorial Africa. His life has been filled with many accomplishments. At 74 years of age he is looking forward to his return to Africa to continue with his work. Before he began the study of medicine at the age of 30 years he had achieved international recognition and was renowned as musician, author and preacher. Notwithstanding such recognition, he chose to follow the life of a medical missionary. On the completion of his medical studies he went to Africa, where "they needed doctors." This philosophy, simply stated, reflects the sincerity of this world famous humanitarian. The medical profession is proud of Dr. Albert Schweitzer. His actions have evealed more clearly than words that the motivating rce of his life has been service to humanity.

### CARE OF THE PARAPLEGIC

THE JOURNAL, during the last two weeks, has published an extended consideration of the care of the paraplegic patient. The National Paraplegic Foundation, which is concerning itself particularly with veterans who have suffered from these seriously disabling injuries, sponsored the article through its medical advisory committee. Among the agencies that have been concerning themselves particularly with the paraplegic patient is the 52 Association, Inc.,[1] organized with the specific purpose of doing everything possible to make life worth while for the veteran who has become disabled through injuries to the spine that make the lower half of the body incompetent. Any physician who reads the intensive detail involved in the scientific care of such patients will realize that laymen who devote their time, their funds and their efforts to bringing some happiness into the lives of those who have given of themselves so fully toward the winning of the war deserve the utmost encouragement and assistance. The 52 Association deserves support, particularly by physicians who know how important is the mental attitude of the disabled patient.

### NATIONAL SCHOOL HEALTH SERVICES ACT

For many years the American Medical Association has collaborated with the National Educational Association and many other groups in stimulating and in making effective programs for improving the health of school children by the detection of correctable defects and by guidance in securing adequate attention to such defects. The National School Health Services Act passed by the Senate provides federal funds under state control to extend the school health program. Section C of this Act (S. 1411) would provide use of school health services for the prevention, diagnosis and treatment of physical and mental defects and conditions. Annually $35,000,000 would be distributed to the states that have developed plans approved by the Federal Security Administrator. The bill does say that the treatment would be provided whenever the parents of the children are unable to provide it. However, a state plan may provide for the prevention and treatment of physical and mental defects of all school children, irrespective of the financial status of the parents. This bill was described in detail in THE JOURNAL for May 28, 1949, page 411. At the annual session of the Association in Atlantic City the House of Delegates adopted a resolution instructing the Board of Trustees to undertake measures to prevent the enactment of this legislation. The Secretary of the Association has sent a letter concerning the resolution to the secretary of each state and territorial medical association. The measure has not yet been considered by the House of Representatives. Obviously the next step is to call the attention of members of the appropriate committee of the House of Representatives to the invasion of the practice of medicine involved in this procedure.

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1. The 52 Association, Inc., now has offices in Chicago, 111 North Canal Street, Room 800; New York, 840 Eighth Avenue; Miami, 420 Lincoln Road, Miami Beach. Other branches are in process of organization.

# ORGANIZATION SECTION

## SCHOOL HEALTH SERVICES

### Statement Submitted to Sub-Committee on Public Health, Science and Commerce, of the Committee on Interstate and Foreign Commerce of the House of Representatives

I am Walter B. Martin, a practicing physician of Norfolk, Va. I am appearing as a member of the Board of Trustees of the American Medical Association. This association had a membership as of May 1, 1949, of 142,882 physicians.

I am here to express opposition to H. R. 3942 and other identical bills as they are now drawn. We are in agreement with the general purpose of the bill as stated in Section 2. We desire to see the health service for children of school age improved to the end that each child will have an opportunity to grow to maturity unhampered by preventable diseases or conditions. As in all endeavors in the field of social welfare, this is an ideal and not possible of complete realization in the present state of our educational, political and moral progress. We agree that there is a real need of an improved health service for school children and that lack of funds in some areas has and will retard the development of a proper program.

The question for consideration therefore is whether the plan proposed in this bill as now written provides the best means of accomplishing its objectives. We believe not, without some very definite and radical changes. The fundamental purpose of the bill is so worth while that we would not oppose it if we did not feel that in its present form it would fail to accomplish its purpose. Our objections are directed to certain basic principles involved and to some specific details.

The whole question of federal subsidy and of the partition of tax resources between the federal, state and local governments needs to be reexamined and reevaluated. The flow of the major fraction of our tax money into the federal treasury and its distribution to the several states in the form of subsidies is a dangerous procedure, and if not properly safeguarded, threatens the security of our form of government. The tax resources of localities and states have become so depleted that they are unable to carry out needed and worth while projects without federal aid. The evil of this becomes apparent when we see federal subsidy used as a club to compel the adoption by the states of certain procedures not at the time acceptable to all of the states, and at times contrary to their political and moral philosophy, and even their laws.

Federal control to a greater or lesser degree follows the distribution of federal subsidy. Since these funds are appropriated from the federal treasury, it is assumed that some form of federal administration and control must be set up. In this bill, the administrative provision follows the familiar pattern. A federal agency is designated to administer the act, and the head of that agency becomes the administrator. He is granted then the power to make such regulations as are necessary to carry out the purpose of the act. The states, through their governing bodies, are required to accept the provisions of the act as written. The states are then required to submit a plan acceptable to the federal administrator. If he fails to approve of a plan or, after a plan is in operation, disapproves its manner of operation, he can block completely the flow of federal funds to that state.

Recourse may be had to the courts, but by the very wording of this Act, the outcome of the appeal is weighted in favor of the federal administrator, since paragraph (*b*) of Section G states, "The findings of the facts by the Federal Administrator unless substantially contrary to the weight of evidence shall be conclusive."

In the event a state law prevents the state from accepting a part or the whole of the act, the administrator is empowered to invade the state and set up machinery within the state to carry out the purpose of the Act.

The assumption that a federal administrator is wiser, more honest, more patriotic and more devoted than any of the administrators of the several states is not in fact true, but is one that is commonly made. This idea goes straight back to the old theory that some special virtue resides in the Administrator of the Supreme Government and is contrary to democratic principles.

This Act brings federal administration into close contact with every elementary and secondary school in the country. From the standpoint of medical care this is particularly objectionable. It is our belief that the primary responsibility for the health of an individual rests on himself or his family, then on the local community and next on the state. The intrusion of the federal government into the picture is objectionable and should only take place when the situation to be corrected affects in fact the national welfare or safety. The setting up of any one pattern in all states is unnecessary and harmful to true progress, since it prevents experimentation and destroys initiative, not only in the state and local government, but also in the individual. If 29,000,000 children are to be taught that their health service must stem from the federal government, then in one generation the road to complete federal control of medicine will be open.

We believe that it is highly desirable that additional funds be made available for the purpose of improving medical service to children and for moving toward the objectives stated in the preamble of this bill. We believe that federal control in the administration of the bill is harmful. The Congress should lay down broad general controls in the bill. The only necessary administrative controls should be a proper audit of funds to determine that they have been honestly administered. If any state carried out the basic provisions of the bill in such a way as to react harmfully or unjustly to any group, an appeal to the appropriate federal court would be effective.

Aside from these general objections, there are certain specific details that we feel should be considered most carefully.

1. The bill straight-jackets the planning of a state, although the state and localities must put up an amount of money equal to that furnished by the Federal government. State plans should vary according to the specific needs in the several states.

2. No recognition is given to the important fact that medical care is an individual matter and can best be given by a physician of the patient's choice. If carried out on a group basis, or by salaried employees, an impersonal type of medical care may develop that while mechanically excellent may lack the soul and spirit that makes medical service most effective.

3. Paragraph 7, page 8, sets up a state advisory committee, but there is no requirement that any member of this committee shall be a doctor of medicine. The provision of good medical care is a complex and highly technical procedure, yet the importance of the physician in the direction of the program is not recognized.

4. On page 6, paragraph (*c*) the way is made open for providing medical care to all children regardless of the ability of their parents to pay for such treatment. We can see no justification for expenditure of tax funds for this purpose, nor does this provision come within the scope of the general purposes of the bill as stated in Section 2. It would greatly increase the work load of any organization set up to carry out the program and lead to deterioration in the quality of care rendered those who most need the service. Such a provision would add greatly to the cost and would link this bill with other bills that have a definite socialistic purpose.

We hope that this bill can be so altered that its main purpose of improving medical service to school children can be accomplished without violating sound principles of democratic government.

## MEDICAL AND BIOLOGICAL ABSTRACTING CONFERENCE HELD BY UNESCO

### Report by Dr. Henry Viets, Representing the American Medical Association

The Interim Coordinating Committee on Medical and Biological Abstracting of the United Nations Educational, Scientific and Cultural Organization held its first full session at Unesco House, Paris, June 1-4, 1949.

Dr. Hugh Clegg, the editor of the *British Medical Journal,* acting as chairman, reviewed its activities since 1946. Toward the end of the war the British Medical Association made plans to establish a medical abstracting service as soon as conditions should permit. At about the same time, a group of scientists in Amsterdam announced their intention of publishing an abstracting journal in the English language under the title *Excerpta Medica.* A Coordinating Committee was established in UNESCO, largely through the efforts of Dr. I. M. Zhukova of the Department of Natural Sciences. A number of meetings were held, and among the resolutions passed was one denoting that it was considered undesirable to duplicate specialist abstracting journals and that a comprehensive abstracting service, in the sense of abstracting all articles of all journals, was neither possible nor desirable. An effort should be made toward collaboration by the exchange of abstracts, thus avoiding duplication of abstracting sections. In addition, the importance of establishing a common method of abbreviating titles of periodicals was emphasized, and the resolution passed favored the method used by the *World List of Scientific Periodicals.* At present, as pointed out by Dr. Clegg, uniformity in the method of abbreviating titles or in arranging the bibliographic entry to an abstract does not exist. In addition, confusion prevails in the use of symbols and abbreviations.

Prof. M. W. Woerdeman, editor in chief of *Excerpta Medica,* indicated it would not be possible to satisfy the many divergent interests by a single abstracting service. When a scientific article is of interest to more than one group of readers, it is probably preferable to have it abstracted by different experts, who alone would know the special interests of their particular groups. Any attempt to centralize abstracting work would lead to this being overlooked. Most of the overlapping which occurred was in preparation rather than in the publication of abstracts. For less well known languages, Professor Woerdeman suggested that the various abstracting agencies might jointly use the common offices in the countries of these languages.

The arrangement of the abstract entry was discussed by Dr. Isabella Leitch, director of the Commonwealth Bureau of Animal Nutrition in the United Kingdom. She suggested that the following order should be considered: (1) author's name, (2) the place where the work was done, (3) the full title of the paper, (4) a translation, not necessarily literal, of the title and (5) the name of the journal, year of publication, volume, part number and first and last pages of the paper.

Although it was pointed out by Dr. G. M. Findlay, editor of *Abstracts of World Medicine,* published under the auspices of the British Medical Association, that the Royal Society Conference on Scientific Information showed that most journals place the title of the paper first in order, the committee voted heavily in favor of the order suggested by Dr. Leitch.

Mrs. Eileen R. Cunningham, representing the Medical Library Association of the United States of America, gave an analysis of the results of a survey which she had made of medical libraries in North America and elsewhere. A large majority of the librarians were in favor of standardizing the form of bibliographic data and advocated that the author's name should come first. Most of the librarians, moreover, expressed a preference for the informative against the indicative type of abstract.

The point of view of the user was also expressed by Prof. P. Lépine, representing the Institut Pasteur of Paris. Professor Lépine urged speedy publication and noted that most of his colleagues preferred a short abstract published quickly rather than a long abstract which might appear many months after the publication of the original article.

Dr. Marguerite Lwoff, representing the *Bulletin de l'Institut Pasteur,* France, presented an extensive review of the use of abbreviations, contractions and symbols. She found much variation in different countries.

Dr. G. M. Findlay presented a survey of the work done by the Royal Society Conference on Scientific Information and pointed out the difficulties which editors of abstract journals have to meet. It was often difficult to find out what medical and biologic journals were actually being published in different parts of the world, and, because of currency and other obstacles, journals were often unobtainable. He urged that a full list of medical and biologic journals should be published and brought up to date at six month intervals. Dr. Findlay expressed disapproval of authors' abstracts, but it was pointed out by other members of the committee that one of the strongest arguments for their use was the existence of *Biological Abstracts,* edited by Dr. J. E. Flynn, who relied on these largely in the compilation of his periodical.

The matter of editing and informing was further discussed by Dr. Charles Wilcocks, director of the Bureau of Hygiene and Tropical Diseases, London. He expressed a view that accuracy, rather than promptness, should be the first consideration of an editor of an abstract journal and that continuity of interest could be maintained only by continuity of editing. He described how the *Tropical Diseases Bulletin* and the *Bulletin of Hygiene* had evolved in response to these needs.

The committee ended its conference by formulating certain proposals which were passed on to UNESCO and in making some recommendations which, it is hoped, will in time be adopted by abstracting organizations. (1) It asked UNESCO to publish a list of medicobiologic journals with the system of abbreviations adopted by the *World List.* It was also recommended that in such a list there should appear opposite the journal titles symbols to indicate which abstracting organizations included them in their survey. (2) The committee also asked UNESCO to collect information on abbreviations and symbols used in medicobiologic literature and to consider publication in a form suitable for use by abstracting services, editors and scientists. (3) It adopted the proposal made by Dr. Leitch for the method of arranging the bibliographic entry to an abstract. Also, it urged that UNESCO continue its efforts to promote a free exchange of medical and biologic journals among different countries.

The committee advocated the universal use of the metric system for weights and measures and the centigrade system for recording temperatures in medical and biologic communications. It was recommended, moreover, that editors of medical and biologic journals should adopt greater uniformity in terms and greater precision in the papers appearing in their journals.

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## PLANNING FOR CIVILIAN DEFENSE

Following a directive by the President calling on the National Security Resources Board to develop a program of civil defense planning under civilian control, the acting Chairman of the Board, John R. Steelman, has announced assignments of phases of civil defense planning to be undertaken by various federal agencies. The agencies which would participate in the planning are: Atomic Energy Commission; National Military Establishment; Federal Security Agency; Federal Works Agency, and the Departments of Agriculture, Commerce, Interior, Treasury and Justice, with other agencies to be added as needed. The National Security Resources Board will coordinate the planning within the federal government and will serve as the focal point of contact for civil defense planning between the federal government and states, municipalities and professional and trade organizations. The National Military Establishment has been assigned planning for civilian participation in defense against armed forces. This assignment will embrace planning for air raid warning systems, including civil air patrol and aircraft detection and identification; auxiliary antiaircraft, harbor and other defenses; and camouflage, protective construction and other physical measures of defense.

Leadership in developing a program of wartime disaster relief will be taken by the Federal Works Agency. This assignment will include plans for civilian and military participation in activities designed to minimize the effects of enemy attack, conventional or otherwise, on the civilian population and the nation's facilities and services, and for repairing the damage or injury resulting from such attack. The program will include plans for:

1. Medical supplies and services, including hospitalization, sanitation and blood banks.

2. Decontamination and measures to minimize the effects of chemical, radiologic and biologic or other unconventional attack.

3. Fire protection and fire fighting.

4. Emergency measures for the regulation of transportation and communications facilities and services and the restoration of order, including conditions under which martial law would be declared and methods for invoking it.

5. Rescue and evacuation, including feeding, clothing and sheltering.

6. Repair and restoration of water, gas, electric and sewage systems, including antipollution measures.

Demolition.

8. Formation and use, only in the event of war, of warden or auxiliary services and mobile battalions, whose members will be prepared to implement appropriate phases of plans developed for wartime disaster relief.

The planning of those internal security measures, such as prevention of sabotage and espionage, which are related to the civil defense program will continue to be coordinated by the National Security Council.

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# Washington Letter

*(From a Special Correspondent)*

July 11, 1949.

### Priest Subcommittee Concludes Health Hearings

On July 7 the House health legislation subcommittee, of which Rep. J. Percy Priest is chairman, adjourned sine die the public hearings on the Thomas-Murray-Dingell and miscellaneous bills which had been under way since May 20. Concluding topics considered by the subcommittee were increased federal support of local public health departments and institution of a federal-state program of school health services.

Witnesses heard on public health units included Dr. W. Palmer Dearing, Acting Surgeon General of U. S. Public Health Service; Dr. Donald A. Dukelow, representing the American Medical Association; Dr. Valdo A. Getting, Massachusetts Health Commissioner and spokesman for the Association of State and Territorial Health Officers; Dr. Haven Emerson, in behalf of the National Health Council and the American Public Health Association; Dr. Edwin L. Crosby, director of Johns Hopkins Hospital and appearing in behalf of the American Hospital Association, and James G. Stone, for the National Tuberculosis Association.

All supported the principle of striving toward maximum coverage of the nation's population by efficient, well staffed local public health units. Dr. Dukelow, however, argued that legislation should define the scope of public health services rather than leave this point to be decided by a federal administrator; that provision should be made for an advisory council; that powers vested in the Surgeon General should not be too broad and, finally, that state agencies have the right to appeal rulings by the Surgeon General to the advisory council or even to the courts.

Similarly, most of the witnesses heard on federal support of school health services endorsed this project in principle, but some raised objections to certain details. Dr. Joseph S. Wall, representing the American Academy of Pediatrics, recommended that the diagnostic and therapeutic services contemplated be restricted to children of families financially unable to pay for such services. He also suggested an amendment the effect of which would be to give the family physician a larger role in the proposed program.

Federal Security Administrator Oscar R. Ewing testified in support of the program, as described in Title V of the Thomas-Murray-Dingell omnibus bill (H. R. 4312, S. 1970).

Dr. Walter B. Martin of Norfolk, Va., appearing as a member of the American Medical Association Board of Trustees, testified that while the aims of the proposed legislation are meritorious, several amendments are indicated in order to minimize dangers of bureaucratic control, indiscriminate distribution of services without regard to economic status and inadequate recognition of the medical profession in formulation of policies.

"We hope that this bill," he said, "can be so altered that its main purpose of improving medical service to school children can be accomplished without violating sound principles of democratic government."

Among other witnesses were George J. Hecht, chairman of the American Parents Committee; Joseph M. Babcock, of the American Optometric Association; Ben H. Gray, national director of the National Epilepsy League, and Selma M. Borchardt, vice president of the American Federation of Teachers.

At the adjournment of the hearings, Chairman Priest said that possibly one or two more sessions may be held to hear testimony by sponsors of an all-Republican bill which would provide for federal subsidization of voluntary prepayment medical and hospital care plans.

### Study Sections of National Institutes Reorganized

Reorganization of the study sections and advisory panels which participate in allocation of millions of dollars annually in federal medical research grants has been completed by National Institutes of Health. Certain sections have been abolished or consolidated, and new ones have been added. The net result has been a reduction of the number of sections from twenty to seventeen. The name of the bacteriology study section has been changed to microbiology and immunology. Sanitation has become environmental health. The panels on antibiotics, tuberculosis and syphilis have been consolidated as a single section on experimental therapeutics. The malaria section has been absorbed by tropical medicine. There is a new study section on morphology and genetics and another on arthritis and rheumatism. The gerontology and radiobiology sections have been disbanded, although the scientists who were members of the former have been invited to stay on in a consultative capacity. Officials of National Institutes of Health emphasized that dissolution of these two sections resulted from the paucity of grant applications and the practicability of distributing their functions over other sections, and should not be interpreted as foreshadowing any diminution of interest in gerontologic and radiobiologic projects.

August 1 is the deadline for receipt of research grant applications intended for review at the fall meetings of the advisory panels and study sections. December 1 is the dealine for consideration at the midwinter meetings and April 1, 1950, for the spring meetings.

### Colonel Seeley Heads Walter Reed Surgical Service

Col. Samuel F. Seeley (M.C.), U. S. Army, who served as executive officer of Procurement and Assignment Service in 1941-1942, has assumed his new post as chief of surgical service at Walter Reed General Hospital in the nation's capital. He relieves Col. Frank E. Hamilton, transferred recently to Gorgas General Hospital in Panama. Since 1946 Colonel Seeley had been chief of surgery at Brooke General Hospital, Fort Sam Houston, Texas. A graduate of University of Minnesota School of Medicine, he is a specialist certified by the American Board of Surgery, and a member of American College of Surgeons and Alumni of Mayo Clinic.

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# Coming Medical Meetings

Aero Medical Association, New York, Aug. 29-Sept. 2. Dr. Thomas H. Sutherland, 214 S. State St., Marion, Ohio, Secretary.
American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., The Homestead, Sept. 8-10. Dr. Leroy A. Calkins, University of Kansas Medical Center, Kansas City 3, Kan., Secretary.
American Congress of Physical Medicine, Cincinnati, Netherlands Plaza Hotel, Sept. 6-10. Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secretary.
American Roentgen Ray Society, Cincinnati, Sept. 4-7. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Iowa, Secretary.
International Congress of Biochemistry, Cambridge, England, Aug. 19-25. Lt. Col. Francis J. Griffin, 56 Victoria St., London, W.C.1, Organizer.
Montana State Medical Association, Butte, Aug. 1-4 Dr Herbert T. Caraway, 115 N. 28th St., Billings, Secretary.
National Medical Association, Detroit, August 8-12. Dr. John T. Givens, 1108 Church St., Norfolk, Va., Secretary.
Utah State Medical Association, Salt Lake City, Sept. 1-3. Dr. Ray T. Woolsey, 42 S. Fifth-East St., Salt Lake City 2, Secretary.
Vermont State Medical Society, Burlington, Sept. 1-2. Dr. James P. Hammond, 542 Main St., Bennington, Secretary.
West Virginia State Medical Association, White Sulphur Springs, The Greenbrier, Aug. 4-6. Mr. Charles Lively, 1031 Quarrier St., Charleston, Executive Secretary.

# GOVERNMENT SERVICES

## NAVY

### DR. KARSNER SWORN IN AS RESEARCH ADVISOR

Dr. Howard T. Karsner, former professor of pathology at Western Reserve University, Cleveland, was sworn in July 1 as medical research advisor to the Surgeon General of the Navy. He will assist and advise the Surgeon General, concerning evaluation, coordination and development of the Navy's Medical Research Program.

Dr. Karsner was recently given the honorary degree LL.D. by Western Reserve University. He is the author of a widely used textbook on "Human Pathology" and many scientific papers. He was the fifth Navy department employee to be appointed under the provision of Public Law 758, which authorizes the Navy to fill thirteen positions in the professional and scientific service above the salary limitations of the regular civil service.

### NEW REGULAR OFFICERS

The following young reserve medical officers on active duty have been appointed to the regular Navy Medical Corps:

Lt. Francis H. McCullough Jr., Jackson Heights, L. I., New York; graduated: Duke University School of Medicine.

Lt. (jg) Frank M. Bryan, Fort Myers, Fla.; graduated: Emory University School of Medicine.

Lt. (jg) Robert P. Dobbie Jr., Buffalo; graduated; University of Michigan Medical School.

Lt. (jg) George E. Gardner, Harrisburg, Pa.; graduated: Hahnemann Medical College.

Lt. (jg) James L. Keating, Falls Church, Va.; graduated: Georgetown University School of Medicine.

Lt. (jg) Raymond J. Lefiler, Sayre, Pa.; graduated: University of Iowa School of Medicine.

Lt. (jg) Francis P. Nash, E. St. Louis, Ill.; graduated: St. Louis University School of Medicine.

Lt. (jg) Edward J. Rupnik, Library, Pa.; graduated: University of Pittsburgh School of Medicine.

Lt. (jg) John W. Troy, Washington, D. C.; graduated: Georgetown University School of Medicine.

### DUTY UNDER INSTRUCTION

The following medical officers have been nominated for duty under instruction in the Graduate Medical Training Program:

Commander Robert B. Simons of LaJolla, Calif., to a residency in dermatology and syphilology at the Naval Hospital, San Diego.

Lt. Charles C. Bratenahl of Washington, D. C., to a fellowship in pathology at the University of Michigan, Ann Arbor, Mich.

Lt. (jg) Jules H. Bogaev of Philadelphia to a residency in urology at the Naval Hospital, Philadelphia.

Lt. (jg) Leland C. Brannon of Piedmont, S. C., to a residency in neurosurgery at the Naval Hospital, Long Beach, Calif.

Lt. (jg) William C. Trier of White Plains, N. Y., to a residency in general surgery at Grasslands Hospital, Valhalla, N. Y.

Lt. (jg) James H. Watts, Jr., of Ansley, Neb., to the University of Illinois College of Medicine, Chicago.

Lt. (jg) James E. Whiteside, of Decatur, Ark., to a residency in pathology at the Naval Hospital, Long Beach, Calif.

### RETIRED OFFICERS ON ACTIVE DUTY

A law signed by the President on June 25 provides for the retention on the active list of certain officers of the medical and dental corps of the Navy. Under the old law, that of 1947, staff captains who had completed 31 years of service faced the possibility of involuntary retirement. The new law provides that a certain number of captains, to be determined by the Secretary of the Navy, shall be continued on the active list to meet the needs of the service, with the provision that until June 30, 1952, no such officer should be involuntarily retired before the age of 62. At present, more than 40 captains in the Medical Corps are eligible for recommendation for continuation on the active list.

### VACANCIES IN THE MEDICAL SERVICE CORPS

The Surgeon General announces that 160 vacancies exist in the Medical Service Corps of the Navy. Qualified civilians are eligible for appointment in the pharmacy, optometry and allied sciences sections. Both male and female candidates may apply for these appointments. Interested personnel may apply to any office of Naval Officer Procurement; they should not apply directly to the Navy Department in Washington, as local offices are required to take first action in all such matters.

### FIRST ACTIVE DUTY

The following lieutenants (jg) in the Medical Reserve Corps have been nominated for their first active duty:

Morris L. Britton of Ballinger, Texas.
Owen W. Doyle of Buffalo.
Robert V. Dutton of Salisbury, N. C.
Frederick V. Light of Euclid, Ohio
John V. McAllister of Old Greenwich, Conn.
George W. S. Moore of Bluefield, W. Va.

### CERTIFIED BY BOARDS

The following additional officers have successfully passed the examinations of specialty boards: Captain Van C. Tipton, American Board of Preventive Medicine and Public Health; Lt. Commander Frances L. Willoughby and Lt. Albert J. Zuska, both have been certified in psychiatry by the American Board of Psychiatry and Neurology.

### PERSONALS

Captain James J. Sapero recently departed for Cairo, Egypt, where he will assume command of the United States Naval Medical Research Unit 3.

## AIR FORCE

### AIR FORCE IS HOST TO MEDICAL MISSION

Air Force Secretary W. Stuart Symington announces that the Air Force will be host to an Alaskan Medical Mission which will hold a conference at Anchorage, Alaska, from July 19 to August 1, under the joint sponsorship of the Department of Interior and the American Medical Association. Air Force and Army medical officers will participate in the two week conference.

The purpose of the conference, which will be conducted by five specialists chosen by the American Medical Association, is to provide Interior Department medical officers now serving at remote areas in Alaska with seminars, demonstrations, clinics and consultations based on the latest technics and developments in internal medicine, general surgery, obstetrics and gynecology, tuberculosis and ophthalmology.

The mission is scheduled to depart from Washington on July 16 by Air Force transport and will arrive in Alaska by July 18. Comprising the mission will be five specialists who will conduct the conference, ten physicians who will serve as replacements for medical officers now serving in Alaska, and representatives of the U. S. Air Force Medical Service. The Air Force will conduct a "round robin" flight to Alaskan outposts at Barrow, Juneau, Katzebue, Kanakanak, Tanana and Sitka, for the purpose of leaving replacements and flying physicians to the Anchorage conference.

# PUBLIC HEALTH SERVICE

## APPOINTMENTS

The last group of personnel appointments to accompany the administrative reorganization of the Public Health Service has been announced. Newly appointed to the Bureau of State Services is Associate Bureau Chief Dr. Joseph O. Dean. A new associate chief in the Bureau of Medical Services is Bruce Forsyth, D.D.S. Associate bureau chiefs carry the rank of assistant surgeon general.

A new division chief in the Bureau of State Services is John W. Knutson, D.D.S., whose assignment is to the Division of Dental Public Health. New appointments in the Bureau of Medical Services include Dr. Daniel J. Daley, who becomes Chief of the Division of Federal Employee Health; Dr. John Cronin, Chief of the Division of Hospital Facilities; Dr. John R. McGibony, Chief of the Division of Medical and Hospital Resources; Miss Margaret Arnstein, Chief of the Division of Nursing Resources, and Dr. G. Halsey Hunt, Chief of the Division of Hospitals. Dr. Dean is a graduate of the University of Nebraska College of Medicine and the Johns Hopkins University School of Hygiene and Public Health. He was commissioned in the Regular Corps of the Public Health Service in 1929. Dr. Forsyth entered the Public Health Service as an intern in 1931 and was commissioned in the Regular Corps in 1939. He received his degree in dentistry at the Michigan School of Dentistry, and did graduate work at the Mayo Clinic, Rochester, Minn., and the National Institutes of Health.

Dr. Knutson is a graduate of the University of Minnesota School of Dentistry and of the Johns Hopkins School of Hygiene and Public Health. He was commissioned in the Regular Corps in July 1934. Dr. Daley was graduated from Georgetown University Medical School, Washington, D. C., and since 1948 he has been chief medical officer of the Bureau of Maritime Services, U. S. Maritime Commission. Dr. Cronin is a graduate of the University of Cincinnati College of Medicine. He was commissioned in the Regular Corps of the Public Health Service in April 1934. Dr. McGibony is a graduate of the University of Georgia Medical School. Formerly he was detailed to the Office of Indian Affairs as Hospital administrator and later served that office as director of health. Miss Arnstein is a graduate of Smith College, Northampton, Mass., of Presbyterian Hospital School of Nursing, New York, and received a master of arts degree from Teachers College, Columbia University, and the degree of master of public health at Johns Hopkins School of Hygiene and Public Health, Baltimore. Dr. G. Halsey Hunt was commissioned in the Public Health Service in 1936 after several years of private practice in Red Bank, N. J. He graduated from the Columbia University College of Physicians and Surgeons.

## NEW CHIEF OF LABORATORY OF BIOLOGICS CONTROL

Dr. Milton V. Veldee, Chief of the Laboratory of Biologics Control of the Microbiological Institute will retire after twenty years at the National Institutes of Health. His successor as chief of the laboratory will be Dr. William G. Workman, former assistant chief, who has been at the National Institutes of Health for eighteen years.

The Laboratory of Biologics Control is charged with the immediate administrative responsibility for enforcement of the Federal Biologics Law. It conducts research in problems having to do with tests required to determine the quality of biologic products. As time permits, research is also conducted in problems related to improving methods of producing the various biologic products.

Dr. Veldee received his M.D. degree from Harvard University in 1919, served an internship at Massachusetts General Hospital and spent one academic year on the faculty of Johns Hopkins School of Hygiene.

Dr. Workman received his M.D. degree from Ohio State University in 1930, served his internship at the United States Marine Hospital in Baltimore and was commissioned in the Public Health Service in 1931. He was a consultant in preventive medicine to the U. S. Army in Korea and Japan and advisor to the military governments of those countries in 1946. He is at present a consultant to the Research and Development Board of the National Military Establishment. He is a Fellow of the American Medical Association, and a member of the Founders Group of the American Board of Preventive Medicine and Public Health.

## STUDY OF LUNG CANCER

The Surgeon General has approved thirty-six special cancer control project grants totaling $550,802. One of the grants is to the California State Department of Public Health, which will study factors in the human environment that may influence the development of lung cancer. This study is the sixth investigative project on environmental carcinogens aided by the National Cancer Institute—other aspects of this problem are under study in New York, Pennsylvania, Ohio, Colorado and New Jersey. The study of respiratory cancer in California will seek possible causal factors through employment history studies of some 500 cases of lung cancer. Where the history of the patient indicates possible occupational exposure, follow-up studies will be made to discover the suspected hazard and the feasibility of protective measures.

Grants were made to the University of Tennessee College of Medicine and the University of Kansas Medical Center for evaluation of a number of reported cancer diagnostic tests. This work will be coordinated with a project already under way at the University of Washington, which has also received aid from the National Cancer Institute.

Seventy-four of the 79 medical schools in the United States now have cancer training programs which are carried on with the aid of grants from the National Cancer Institute. Allocations totaling $872,477 have been approved by the Surgeon General. Similar grants aid cancer teaching in 36 of 40 dental schools in the United States.

## ADVISORY COMMITTEE ON INDUSTRIAL HYGIENE

The newly appointed advisory committee to the Public Health Service on industrial hygiene will hold its first meeting early in the fall, Dr. W. Palmer Dearing, Acting Surgeon General of the Public Health Service, announced. The committee members will bring together the viewpoints of management, labor, the health professions and State health and labor departments. "This committee has long been needed," Dr. Dearing said. "Especially now, with the importance of the field of air pollution in industrial communities and the increasing interest of labor unions in health and welfare plans, is the Division of Industrial Hygiene in need of broad policy guidance from national leaders in the field." Members of the committee are: Andrew Fletcher, president, St. Joseph Lead Company, New York; Vincent P. Ahearn, of the National Sand and Gravel Association, Washington, D. C.; Nelson H. Cruikshank, of the American Federation of Labor; Harry Read, of the Congress of Industrial Organizations; Theodore F. Hatch, research director, Industrial Hygiene Foundation, Pittsburgh; Dr. R. H. Hutcheson, Commissioner of Public Health for the State of Tennessee, and Harold A. Vonachen, medical director of the Caterpillar Tractor Company, Peoria, Ill.

## TSETSE FLY AND MOSQUITO CONTROL

Dr. Frederick J. Brady, Assistant Chief, Laboratory of Tropical Diseases, National Institutes of Health, has been detailed to the Economic Cooperation Administration to make a preliminary survey of control of trypanosomiasis and malaria in British East and West Africa. Dr. Brady is now in Nigeria with Mr. Harry H. Stage, insecticide expert of the U. S. Department of Agriculture. After an investigation there of research programs, they will develop detailed recommendations for further U. S. assistance for control of the tsetse fly and mosquito in British dependent territories.

# PHYSICIANS SEPARATED FROM SERVICE

## ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

### Alabama

| | |
|---|---|
| Banton, H. S. Jr | Birmingham |
| Brown, J. B | Montgomery |
| Cale, R. T | Birmingham |
| Davis, J. A. Jr | Bessemer |
| Hill, J. H | Albertville |
| Llewellyn, R. C | Foley |
| Milligan, John Joseph | Lowndesboro |
| Ragsdale, Milton Clay III | Bessemer |
| Rea, R. C | Birmingham |
| Scott, E. V. Z | Birmingham |
| Summers, D. C | Tuscaloosa |
| Warren, William S | Mobile |
| Young, Jack R | Florala |

### Arkansas

| | |
|---|---|
| Clay, R. A | Foreman |
| Ford, Z. W. Jr | Fayetteville |
| Gibbins, J. C | Jonesboro |
| Lieblong, T. K | Conway |
| McCrary, R. F | Hot Springs |
| McKinney, J. S | Conway |
| McPherson, Albert Z | Little Rock |
| Monroe, H. U | Stone County |
| O'Neal, W. H | Little Rock |
| Rainwater, Weldon T | Walnut Ridge |
| Sims, Dorsey Taylor | Little Rock |
| Steele, Marion Arthur | Gentry |

### California

| | |
|---|---|
| Arnold, J. W | Long Beach |
| Artman, Edward Louis | Los Angeles |
| Baker, Milton Lincoln | Menlo Park |
| Brown, S. L | San Francisco |
| Clark, Stanley A. Jr | Palo Alto |
| Deutsch, D. L | Monterey Park |
| Dickson, Louis LeRoy | Pasadena |
| Ervin, J. R | San Francisco |
| Fitzpatrick, W. A | Martinez |
| French, G. O | Mountain View |
| Gates, J. M | Seeley |
| Hornberger, Ralph Charles | Oakland |
| Lagerlof, D. O | Los Angeles |
| Moseley, M. H | Oakland |
| Phillips, D. T | Bellflower |
| Pote, W. W. H | Los Angeles |
| Scow, J | Paso Robles |
| Smith, Roy Cameron | Los Angeles |
| Torkelson, H. P | San Francisco |
| Vandiver, G. H | Los Angeles |
| Walla, Erwin | Los Angeles |

### Florida

| | |
|---|---|
| Clark, George Beach | Bradenton |
| Currie, H. F | Defuniak Springs |
| Gridley, Roger W | Orlando |
| McClure, John Niel Jr | Palmetto |
| Maxwell, Roscoe S. Jr | Punta Gorda |
| Mendoza, C. C | Jacksonville |
| Myers, William Mahon | Tampa |
| Rodgers, William Ashley | Lakeland |
| Taylor, G. D | Jacksonville |

### Georgia

| | |
|---|---|
| Case, I. C. Jr | Augusta |
| Cheshire, H. L | Thomasville |
| Foster, G. R. Jr | McDonough |
| Graham, W. L. Jr | Augusta |
| Jordan, Henry Speir | Atlanta |
| Lewis, A. G. Jr | Eastman |
| McCollum, W | Thomasville |
| McCranie, E. J | Milan |
| Mauldin, J. W | Dahlonega |
| Maxwell, E. J. Jr | Lexington |
| Paschall, J. D | Dawson |
| Patrick, E. V | Jackson |
| Petway, A. P | Columbus |
| Richardson, Augustus C. Jr | Montezuma |
| Roach, G. S. Jr | Hawkinsville |
| Sims, C | Commerce |
| Stegman, J. F | Atlanta |
| Sturdevant, C. E | Atlanta |
| Tenebaum, R | Atlanta |

### Illinois

| | |
|---|---|
| Ashley, F. J | Cicero |
| Clark, C. L | Barry |
| Cwalina, T | Chicago |
| Douglas, D. W | Litchfield |
| Ellis, J. T | Chicago |
| Goldsborough, J. B | Chicago |
| Grant, Walter J | Chicago |
| Johnson, C. W | Alton |
| Karandjeff, A. D | Granite City |
| Lasky, M. I | Batavia |
| Lerner, H. B | Kewanee |
| Miller, Albert J | Chicago |
| Novak, C. G | Berwyn |
| Palus, T. A | Chicago |
| Russell, L. A. Jr | Chicago |
| Schutz, P. J | Chicago |
| Stipak, E. P | Chicago |
| Swan, P. L | Elkville |
| Tobin, D. A | Chicago |
| Vil, Charles Stephen | Chicago |

### Indiana

| | |
|---|---|
| Crawford, Theodore R | Greencastle |
| Dukes, J. E | Dugger |
| Edwards, E. T. Jr | Vincennes |
| Endicott, W. H | Indianapolis |
| Fisch, C | Anderson |
| Hollis, W. H | Princeton |
| Irwin, G. W. Jr | Roachdale |
| Knoy, N. J | Paragon |
| Lorman, J. G | Indianapolis |
| McClain, Edwin Stanton | Franklin |
| Moss, H. B | Indianapolis |
| Parker, P. E. Jr | Marion |
| Phillips, J. F | Peru |
| Scantland, W. A | Richmond |
| Shonk, H. W | Bloomington |
| Silver, R. A | Indianapolis |
| Talbert, P. C | Auburn |

### Iowa

| | |
|---|---|
| Donelson, K | Creston |
| Fieselmann, G. F | Traer |
| Johnson, J. A | Missouri Valley |
| Muilenburg, R. A | Orange City |
| Paul, R. D | Anamosa |
| Silver, A. S | Des Moines |
| Sleeter, John William H | Toledo |
| Teigland, Joel David | Randall |
| Thomas, C. G. Jr | Monticello |
| Thomsen, John G | Estherville |
| Updegraff, E. R | Boone |
| Updegraff, W. R | Boone |
| Watson, John Benezet | Humboldt |

### Kansas

| | |
|---|---|
| Anderson, E. E | Marysville |
| Donald, E. W | Caldwell |
| Grubb, P. H | Galena |
| Hanis, L. J | Kansas City |
| Kaul, P. G | Holton |
| Kettner, Edward George | Lawrence |
| Phillips, S. B | Hiawatha |
| Robison, L. J | Bison |
| Scott, John Robert | Wichita |
| Smith, F. L. Jr | Colby |
| Stark, J. R | Manhattan |
| Turgeon, L. V. Jr | Topeka |
| Weber, D. J | Wilson |

### Louisiana

| | |
|---|---|
| Cassidy, Francis P | Bogalusa |
| Ellender, A. J. Jr | Houma |
| Hammonds, Florent H | New Orleans |
| Jacobs, H. J. Jr | Mathews |
| La Cour, E. G | New Orleans |
| Langford, R. B | New Orleans |
| Langlois, W. J. Jr | New Orleans |
| Lewis, M. L. Jr | New Orleans |
| May, H. W | New Orleans |
| Smith, Denton W | Merryville |
| Stoer, Ulysses H | Shreveport |

### Maryland

| | |
|---|---|
| Barker, D. H | Silver Spring |
| Bell, D. F | Dundalk |
| Conner, E. H | Baltimore |
| Davis, J. B | Luke |
| Douglas, Gordon Watkins | Catonville |
| Joos, H. A | Baltimore |
| Kieffer, R. F. Jr | Baltimore |
| Larmore, E. M. Jr | Tyaskin |
| Lippincott, S. W. Jr | Baltimore |
| Pollock, G. F | Boyd |
| Rudman, G. E | Baltimore |
| Spencer, W. G. Jr | Baltimore |
| Stein, H. J | Baltimore |
| Strobel, Martin Edward | Frederick |
| Swain, G. M | Chevy Chase |
| Tinker, F. X. P | Baltimore |
| Trevaskis, A. E | Cumberland |
| White, Joseph McC. III | Baltimore |
| Woods, A. C. Jr | Baltimore |

### Massachusetts

| | |
|---|---|
| Alpert, Joseph | Roxbury |
| Dunn, J. F | Fall River |
| Dykens, J. W | Worcester |
| Fowler, D. M | Middleboro |
| Greene, William Baird | Lancaster |
| Jones, Oakley Robert | Cambridge |
| Kaplan, I | Chelsea |
| LaMarche, R. N | Dorchester |
| Liming, R. W | Newton Center |
| Paige, E | Winthrop |
| Reynolds, Preston W | Belmont |
| Shalek, Seymour Richard | Brookline |
| Strachan, Charles E | Worchester |
| Vaughan, J. H | Boston |
| Weed, Charles Harvey | Brookline |

### Michigan

| | |
|---|---|
| Cleveland, E. R | Kalamazoo |
| Dana, G. W | Washtenaw |
| Henig, B. E | Detroit |
| Jaarsma, R. A | Grand Rapids |
| Lemmer, Richard Allen | Kalamazoo |
| Meacham, R. E | Monroe |
| O'Dell, J. H. Jr | Three Rivers |
| Preshaw, D. E | Detroit |
| Riekse, J. M | Grand Rapids |

### Minnesota

| | |
|---|---|
| Goltz, R. W | St. Paul |
| Joyce, George Thomas | Rochester |
| Judd, Allen Shelp | Owatonna |
| Saidy, John T | Rochester |
| Short, E. H | Worthington |
| Strobel, Robert John | St. Cloud |
| Strouth, Bernard Peter | Fairbault |
| Stutzman, F. L | Newport |
| Walter, F. H | St. Paul |

### Missouri

| | |
|---|---|
| Collodi, George A | St. Louis |
| Czebrinski, E. W | St. Louis |
| Douglass, D. D | Webb City |
| Fitzpatrick, T. J | Jackson |
| Gantt, E. S. Jr | Jefferson City |
| Gibson, D. M | Kansas City |
| Glenn, D. H | Columbia |
| Guhleman, H. V. Jr | Jefferson City |
| Kilker, D. E | Normandy |
| Long, C. E | Braggadocio |
| Marbury, B. E | Clayton |
| Moss, W. T | Columbia |
| Rubin, Samuel Harold | St. Louis |
| Twin, E. J | Kansas City |
| Wallace, T. H | Joplin |
| Wyatt, W. M | Kansas City |

### Montana

| | |
|---|---|
| Coutu, M. H | Helena |
| DeBoer, A | Manhattan |
| Whittinghill, J. A | Helena |

# PHYSICIANS SEPARATED FROM SERVICE

## New Jersey

| | |
|---|---|
| Brunt, H. H. Jr. | Pemberton |
| Daniels, E. M. | Orange |
| DeLuccia, R. L. | Paterson |
| Fardelmann, R. L. | Montclair |
| Frederick, G. F. | Woodbridge |
| Greene, Robert Francis | Union City |
| Kilbourne, P. A. | Ridgewood |
| Langgaard, C. E. | Livingston |
| Lavine, L. S. | North Bergen |
| Leuzzi, D. A. | Union City |
| London, R. A. | West New York |
| Longbothum, G. M. | Dunellen |
| McCulloch, H. Jr. | Plainfield |
| Mason, E. A. | Orange |
| Maurer, W. R. Jr. | Teaneck |
| Platz, E. J. | Dumont |
| Pulliam, J. M. | Collingswood |
| Robbins, Robert | Belmar |
| Romeo, Charles Joseph | Trenton |
| Rosenbauer, H. J. | Fords |
| Saigh, R. | Ridgefield |
| Sheehy, T. F. Jr. | Teaneck |
| Simon, L. L. | Newark |
| Steinberg, L. A. | Bridgton |
| Vaccaro, H. J. | Allenhurst |
| Veenema, Ralph James | North Haledon |

## New York

| | |
|---|---|
| Anderson, E. T. | Troy |
| Asch, S. S. | New York |
| Boggs, Thomas Renwick Jr. | Rochester |
| Cantwell, E. K. | Snyder |
| Curtiss, Robert Kimber | Syracuse |
| Daly, W. M. | Schenectady |
| Dickler, Donald J. | Brooklyn |
| Eagle, J. F. Jr. | New York |
| Evans, G. E. | Brooklyn |
| Fahy, D. G. | Long Island |
| Flint, G. W. | Lawrence |
| Forman, Jerome Bernard | Brooklyn |
| Froehlich, G. E. | New Rochelle |
| Gerold, F. P. | Brooklyn |
| Gyves, William Steven | Bronx |
| Henriques, John Thomas | Brooklyn |
| Hurowitz, J. | Mount Vernon |
| Kallman, S. J. | New York |
| Leight, Leonard | New York |
| Lilienfeld, S. M. | New York |
| Lyons, T. J. Jr. | Brooklyn |
| McEvoy, C. D. Jr. | Scarsdale |
| Messing, K. | New York |
| O'Connor, W. J. | Long Island City |
| Pellegrino, P. C. | New York |
| Phillips, M. W. | Malone |
| Rangatore, Joseph S. | Niagara Falls |
| Reidel, Joseph G. | Syracuse |
| Schwartz, William B. | Woodmere |
| Scrofani, E. W. | New York |
| Stich, E. | New York |
| Tabacco, A. J. | Albany |
| Thaler, A. | Brooklyn |
| Trainer, D. | Brooklyn |
| Ureles, A. L. | Rochester |
| Williams, L. W. | New York |
| Zaneski, B. W. | Long Island |

## North Carolina

| | |
|---|---|
| Clark, D. H. | Clarkton |
| Crowe, J. T. III | Durham |
| Fewell, R. A. | Cooleemee |
| Hedrick, R. E. | Lexington |
| Hege, J. R. Jr. | Raleigh |
| Kelley, T. F. Jr. | Albemarle |
| Kiger, R. S. Jr. | Winston-Salem |
| Jennings, R. G. Jr. | Thomasville |
| Long, W. L. Jr. | Warrenton |
| May, William Joseph | Thomasville |
| Owen, G. F. Jr. | Dunn |
| Ratliff, Cliff Jr. | Morven |
| Sluder, H. M. | Asheville |
| Smith, J. J. | Greenville |
| Smith, S. M. Jr. | Pilot Mountain |
| Townsend, Bertram F. | Durham |
| Walker, J. B. Jr. | Burlington |

## Ohio

| | |
|---|---|
| Altenburg, I. H. | Cincinnati |
| Bailey, Donald Kenney | Loraine |
| Dorn, R. M. | Cleveland |
| Elliott, Francis Eugene | Mansfield |
| Fitzgerald, R. V. | Toledo |
| Foster, H. Mc. | Hamilton |
| Gernstetter, S. L. | Univ. Heights |
| Gibbons, W. F. | Fairview |
| Honzik, R. J. | Cleveland Heights |
| Kelleher, J. C. | Elyria |
| Liggett, C. L. | St. Clairsville |
| Linton, N. G. | Jamestown |
| McDonald, H. E. | Findley |
| Matthews, B .S. | Cleveland |
| Meredith, L. C. Jr. | Oberlin |
| Renneker, R. E. | Cincinnati |
| Rinderknecht, R. E. | Dover |
| Russell, P. W. | Kent |
| Shie, M. D. | Cleveland |
| Taylor, Jack Neel | Columbus |
| Van Blaricum, J. | Milford |
| Wade, Earl Wenman | Broadacre |
| Zeller, Louis C. Jr. | Girard |

## Oklahoma

| | |
|---|---|
| Brown, I. H. | Muskogee |
| Childress, M. A. | Allen |
| DeVore, J. W. | Oklahoma City |
| Eads, C. H. | Tulsa |
| Eskridge, J. B. III | Oklahoma City |
| Fife, P. R. | Oklahoma City |
| Gephardt, M. C. | Tulsa |
| Hampton, James Barnett | Miami |
| Hobgood, Richard Guy | Concho |
| Martin, L. A. | Oklahoma City |
| Phipps, J. | Oklahoma City |
| Reid, Oren Creighton | Lawton |
| Rorie, J. E. | Oklahoma City |
| Shaw, Clinton McK. Jr. | Durant |
| Stuart, John Arthur Jr. | Pawhuska |
| Tisdal, J. H. | Elk City |
| Tozer, H. G. | Muskogee |

## Oregon

| | |
|---|---|
| Crosbie, J. | Portland |
| De Romanett, J. | Pendleton |
| Endicott, W. R. Jr. | Portland |
| Erlandson, G. O. | Klamath Falls |
| Gumm, Melvin LeRoy | Beaverton |
| Harris, H. H. | Portland |
| Howard, Jesse Clarence | Portland |
| Kvernland, Bruce Norman | Portland |
| Merrifield, R. C. | Medford |
| Schiewe, P. R. | Portland |
| Stoddard, D. H. | LaGrande |
| Terrall, V. L. | Union |
| Thompson, W. B. | Ashland |
| Weissert, Wesley R. | Newberg |

## Pennsylvania

| | |
|---|---|
| Abplanalp, A. A. | Franklin |
| Ainsworth, T. H. Jr. | Drexel Hill |
| Coleman, A. H. | Philadelphia |
| Davis, Walter G. | Pittsburgh |
| Evans, J. B. | Philadelphia |
| Friedericks, C. W. | Reading |
| Goldberg, H. | Philadelphia |
| Hull, W. M. | Altoona |
| Isaacson, S. I. | Johnstown |
| Jones, H. W. Jr. | Swathmore |
| Laigon, Eugene | Coaldale |
| Levinson, W. D. | Mount Pleasant |
| Luther, R. D. | Philadelphia |
| McCurdy, H. W. | Elwood City |
| Mellon, R. | Philadelphia |
| Moyer, John Henry | Hershey |
| Phillips, J. D. | Harrisburg |
| Putkoski, E. P. | Nanticoke |
| Reber, H. F. | Reading |
| Ricketts, J. | Pittsburgh |
| Stoner, Emery K. | Bedford Valley |
| Sugint, F. P. | Philadelphia |
| Taitz, I. I. | McKeesport |
| Yates, C. W. Jr. | Pittsburgh |

## Tennessee

| | |
|---|---|
| Caradine, R. S. | Memphis |
| Eastridge, R. D. | Oakdale |
| Fick, A. H. | Humboldt |
| Gupton, William E. Jr. | Nashville |
| Jones, H. E. | Nashville |
| Landsee, C. G. | Memphis |
| Line, F. G. | Memphis |
| Luckey, Egbert Hugh | Nashville |
| McCormack, L. J. | Lenoir City |
| McNeeley, Samuel Gene | Tazewell |
| Mohr, J. F. | Memphis |
| Moore, J. R. | Nashville |
| Northern, W. L. Jr. | Nashville |
| Paine, R. | Memphis |
| Painter, L. B. Jr. | Knoxville |
| Powell, C. J. | Memphis |
| Steward, J. A. | Chatta |
| Thaler, Richard W. | Knoxville |
| Thomison, J. B. | Lookout Mountain |

## Texas

| | |
|---|---|
| Andres, R. | Dallas |
| Block, W. J. Jr. | San Antonio |
| Bohmfalk, J. H. | San Antonio |
| Dowlen, J. A. | Windom |
| Fuqua, C. F. | Hamilton |
| George, L. E. | Lubbock |
| Johnson, Jesse B. Jr. | Galveston |
| Landress, J. B. | Dallas |
| Markette, B. B. | San Antonio |
| Osborn, John Dick | Dallas |
| Schwartz, H. R. | Houston |
| Sevier, S. M. | Dallas |
| Shamburger, W. H. Jr. | Dallas |
| Spring, P. L. | Friona |
| Stevenson, R. A. Jr. | Port Lavaca |
| Terrell, Pruitt D. | Rotan |
| Young, J. E. Jr. | Hillsboro |

## Vermont

| | |
|---|---|
| LeBow, H. A. | Burlington |
| Ling, T. W. | St. Johnsbury |
| Lynch, R. G. | Burlington |
| Solez, Chester | Bradford |
| Whitcomb, Wayne P. | Burlington |

## Virginia

| | |
|---|---|
| Bennett, H. H. Jr. | E. Falls Ch. |
| Fitzhugh, F. W. Jr. | Charlottesville |
| Hagan, R. C. | Roanoke |
| Nakdimen, Marcus | Abingdon |
| Painter, Ben Thomas | Williamsburg |
| Sease, R. H. | Richmond |
| Segal, M. | Norfolk |
| Shotton, Donald | Riverview |

## Washington

| | |
|---|---|
| Bakke, J. L. | Seattle |
| Deisher, Robert William | Everett |
| Hardy, F. Mc. Jr. | Yakima |
| Hartmann, R. C. | Everett |
| Heimbigner, Elmer | Odessa |
| McKibben, Ernest Collett | Kirkland |
| Mongrain, Merlin Raymond | Seattle |
| Olson, W. R. | Auburn |
| Radke, A. W. | Everett |
| Skinner, H. H. Jr. | Yakima |
| Smick, C. G. | Spokane |

## West Virginia

| | |
|---|---|
| Clubb, E. M. Jr. | Morgantown |
| Flohr, L. J. Jr. | Huntington |
| Haught, J. S. | Clarksburg |
| Steele, Byron W. Jr. | Mullens |

## Wisconsin

| | |
|---|---|
| Dailey, D. W. | Elcho |
| Gutschenritter, James W. | Milwaukee |
| Knutson, E. W. | Cumberland |
| Lambrecht, B. E. | Madison |
| Lewis, S. R. | Waukesha |
| Lund, R. E. | Cumberland |
| Misuraca, L. O. | Milwaukee |
| Waters, H. R. | Wisconsin Rapids |

# Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

## ALABAMA

**Traveling Classroom for Physicians.**—The University of Alabama College of Medicine, University, has started its Traveling Seminar, a classroom on wheels for practicing physicians. Teams of doctors from the medical college conduct two and three day meetings throughout the state. The purpose is to keep the general practitioner abreast of medical progress. The Alabama State Medical Association is providing funds to pay for incidental expenses incurred by the lecturers. The Extension Division of the University of Alabama has taken on the responsibility of handling the mechanics of the meetings. Programs are in the hands of the seminar committee, composed of Drs. Robert F. Guthrie; Roy R. Kracke, dean of the school; Ray O. Noojin, and Roger D. Baker.

## ARIZONA

**Organize Rheumatism Society.**—A group of doctors especially interested in arthritis, rheumatism and allied disorders have formed a statewide society which will seek affiliation with the American Rheumatism Society. The group elected Dr. Harry E. Thompson, Tucson, president, and Dr. Alexander N. Shoun, Tuscson, secretary-treasurer. Occasional scientific programs will be conducted in Tucson and Phoenix and possibly in other localities to bring to physicians the newer developments in the treatment of rheumatic diseases.

## CALIFORNIA

**State Medical Election.**—The California Medical Association has chosen the following officers: Drs. R. Stanley Kneeshaw, San Jose, president; Donald Cass, Los Angeles, president-elect, and L. Henry Garland, San Francisco, secretary-treasurer.

**Physicians Aid Fund.**—The San Diego County Physicians Aid Fund has been activated for the use of members of the society to aid them financially in case of disability due to injury or illness. It will be under the direction of a three man committee appointed by the president of the society. Allotments from the fund are to be made available as a loan with no time limit clause and without interest. The fund is to be raised on a voluntary basis.

**How to Obtain a Family Doctor.**—The San Diego County Medical Society has approved a plan whereby all new residents in San Diego will be informed that those who do not have a family physician may obtain such services at any time through the Doctors Service Bureau. Newcomers will be contacted by the New Resident Service, which contacts personally an average of 500 new residents per month and mails their information to another 350 to 400 newcomers who cannot be reached in person.

## CONNECTICUT

**Auxiliary Distributes Pamphlets.**—Members of the Woman's Auxiliary of New Haven County distributed more than 40,000 educational pamphlets to 291 physicians' offices in a recent three day campaign. The distribution was in charge of Mrs. Alexander Bassin, New Haven, chairman of the auxiliary's Volunteer Committee. Space for sorting and wrapping literature was furnished by the New Haven Medical Association in its building at 364 Whitney Avenue. The communities on the distribution list included New Haven, East Haven, West Haven, Milford, North Haven, Hamden and Cheshire.

## KANSAS

**Outbreak of Food Poisoning.**—The Kansas State Board of Health reports that potato salad was responsible for the outbreak of food poisoning among 250 Seymour packing plant employees at the annual picnic in Topeka June 13. Hemolytic staphylococci were cultured from wounds on the hands of the person who prepared the salad in a private residence. Over 240 of the victims were hospitalized.

## KENTUCKY

**Poliomyelitis Centers.**—As part of the program being prepared by the Kentucky Poliomyelitis Planning Committee in conjunction with various health, hospital and medical agencies to combat the next poliomyelitis epidemic, centers are being established at Ashland, Somerset, Middlesboro and Bowling Green in addition to those already in operation at Louisville, Lexington, Paducah, Owensboro and Covington.

**McDowell House Open to the Public.**—The home of Dr. Ephriam McDowell, Danville's celebrated surgeon who performed the first ovariotomy in 1809, will be kept open to the public during June, July, August and September, from 10 a. m. to 5 p. m. on week days and from 2 p. m. to 5 p. m. on Sundays. This historic house at 125 South Second Street is being kept open by the Woman's Auxiliary of the Kentucky State Medical Association and a group of Danville women working in conjunction with the auxiliary. Hostesses will be in attendance each day to explain the historical background of the McDowell home.

**Appoint Director of Cancer Clinics.**—Dr. Robert H. English on July 1 became clinical director of Kentucky's cancer-mobile and eighteen cancer clinics sponsored by the state health department and the Kentucky Chapter of the American Cancer Society. During World War II he was stationed in Kentucky as an officer of the U. S. Public Health Service. During a recent three year residency in surgery at the U. S. Marine Hospital in Baltimore, he took special training in cancer surgery at the National Cancer Institute at Bethesda, Md. While on this assignment he was also a member of the faculty of Johns Hopkins University School of Medicine, Baltimore.

## LOUISIANA

**New President of State Board of Health.**—Dr. Stonewall J. Phillips of Thibodaux on July 1 succeeded Dr. William V. Garnier of Bastrop as president of the state board of health. Dr. Phillips has been assistant to Dr. Garnier. Dr. Phillips, a graduate of Tulane University of Louisiana School of Medicine, New Orleans, 1921, served with the state health department before entering the armed services in World War II. He worked with the North Carolina State Board of Health following the war and in August 1948 was named assistant to Dr. Garnier, who is retiring to take up private practice.

## MASSACHUSETTS

**Industrial Health Postgraduate Program.**—A new type of postgraduate program for training in industrial health will begin at Harvard University, Boston, in September. The program includes courses in planning, organizing and directing health efforts of industrial companies, whole industries, groups of companies and employees and will be under the direction of the department of industrial hygiene of the School of Public Health. The related teaching and research facilities of Harvard University, including certain special facilities at the Massachusetts Institute of Technology and other cooperating institutions, will be available. Philip Drinker, LL.D., is head of the department. The program will be divided into three major fields: industrial medicine, environmental hygiene and public health. Successful candidates will be awarded the newly established degree of Master of Industrial Health. The courses will be open to all qualified physicians, but preference will be given to persons who have had experience in industrial medicine. Those who wish to enroll either as candidates for the Master of Industrial Health degree or as special postgraduate students in the field of industrial health should apply to the secretary, Harvard School of Public Health, 55 Shattuck Street, Boston 15.

## MINNESOTA

**New Undergraduate Scholarships.**—Beginning next fall, a new program of scholarships will be offered to undergraduate students in the School of Medicine at the University of Minnesota by the Minnesota Medical Foundation. The scholarships will be awarded annually by the foundation in amounts totalling $2,500. Individual grants will range between $500 and $1,000. Students who will be members of the sophomore, junior and senior classes in the fall are eligible to apply, and application will be open from July 15 to September 1 for the coming school year. The scholarship program was authorized at a meeting of the board of directors, and Dr. Wesley W. Spink, professor of medicine at the university, was named chairman of a committee to draw up plans. Scholastic standing and financial need will be considered in the awarding of the scholarships. "There has long been a great need for undergraduate scholarships. Many students have to take part time jobs outside of school and it has been difficult for them to devote the amount of time needed to their medical studies," Dr. Spink said. Other members of the committee which drafted the program were Dr. Howard L. Horns, assistant dean of the medical school, and Dr. George N. Aagaard, director of postgraduate medical education at the university and secretary-treasurer of the foundation.

## NEW YORK

**University Appointment.**—Wallace O. Fenn, Ph.D., professor and chairman of the physiology department of the University of Rochester School of Medicine and Dentistry, was recently appointed assistant dean of the school. Dr. Fenn has been on the medical school faculty for 25 years.

**Cardiovascular Disease Project.**—The State Charities Aid Association has made an agreement with the American Heart Association to undertake a joint demonstration project on cardiovascular disease in the state exclusive of New York City. It is agreed that the program in the cardiovascular disease field shall be in accordance with standards and criteria established by the American Heart Association and with the acceptance of the program guidance of the American Heart Association staff; also that for an experimental period fund-raising activities would become the responsibility of the two committees of the local associations and that funds raised would be distributed in accordance with the current policies of the American Heart Association and the National Tuberculosis Association.

## TENNESSEE

**Portrait of Dr. McGehee.**—A portrait of the late Dr. J. Lucius McGehee, for 46 years a member of the faculty of the university and for the last 15 years head of the department of surgery, was presented to the university at commencement exercises on June 13. Dr. McGehee died Feb. 16, 1949. The portrait was presented by those who had served residencies under his direction.

**New Assistant Dean.**—Dr. Robert H. Miller, Memphis, associated with the University of Tennessee since 1914, retired June 30 as assistant dean of medicine and was succeeded by Dr. Frank L. Roberts, professor of preventive medicine. Dr. Miller taught in the department of anatomy beginning in 1914, was made a full time associate professor in anatomy in 1924 and had been assistant dean since 1939. Dr. Roberts received his M.D. degree from the University of Minnesota Medical School, Minneapolis, in 1922. Before joining the university as professor and head of the department of preventive medicine, he had been health officer of Gibson County for twelve years.

## TEXAS

**Personal.**—Dr. Frank M. Townsend of the Scott and White Clinic, Temple, has accepted appointment as associate professor of surgical pathology at the University of Texas School of Medicine, Galveston, beginning in October. Dr. Townsend will also be consulting surgical pathologist to the hospitals of the University of Texas Medical Branch.

**State Medical Election.**—Officers of the State Medical Association of Texas for the coming year include Drs. George V. Brindley, Temple, president; William M. Gambrell, Austin, president-elect; Thomas H. Thomason, Fort Worth, treasurer, and Harold M. Williams, Fort Worth, secretary-editor. Delegates to the American Medical Association with terms beginning in January 1950 are Drs. Truman C. Terrell, Fort Worth; Edward H. Cary, Dallas, and Britton E. Pickett Sr., Carrizo Springs.

**Laboratory for Industrial Hygiene.**—The University of Texas Medical Branch, Galveston, plans to open a special research laboratory for industrial hygiene in September. Facilities and space have been provided for the project, which will be under the direction of Dr. Carl A. Nau, professor of preventive medicine and public health, and J. M. Neal, sanitary engineer. The new laboratory will cooperate particularly with the heavy industries in Texas City, but is available for consultation and service to all Texas industries.

## VERMONT

**State Society Appoints Executive Secretary.**—The Vermont State Medical Society announces the appointment of Mr. Getty Page as executive secretary and public relations director. A graduate of Syracuse University, he has served as American Red Cross field director and state relations officer; more recently he has been dean of students, professor of biology and director of health and physical education at Rutland Junior College.

**Open Cardiovascular Unit.**—The Cardiovascular Unit at the Bishop DeGoesbriand Hospital was established by the College of Medicine of the University of Vermont for the special study and care of cardiovascular patients by means of modern scientific methods. It went into operation July 1. Investigative work now in progress is partly supported by funds from the National Heart Institute and the American Heart Association. A cardiovascular outpatient clinic, conducted by Dr. Christopher M. Terrien, will function in close cooperation with the unit. The cardiovascular unit will continue its refresher course on cardiovascular diseases for general practitioners in Northern New England and vicinity. A course of 28 lectures was given June 13-18.

## WISCONSIN

**Dr. Elvehjem Receives Nutrition Award.**—Conrad A. Elvehjem, Ph.D., of the University of Wisconsin, Madison, was honored at the recent annual meeting of the National Live Stock and Meat Board. He was presented an award in recognition of his contribution to the science of biochemistry in the field of nutrition. The board has placed several research grants at the University of Wisconsin in support of studies which have been carried on under the direction of Dr. Elvehjem.

**Mental Hospitals Included in Preceptorship Program.**—University of Wisconsin Medical School fourth year medical students began study June 27 in state mental hospitals as part of their preceptorship training. The program will give students an opportunity to view first hand the treatment of mental illness and will augment their academic training with practical application. Under Wisconsin's preceptorship system, which has been carried on for years by the medical school, senior medical students spend half their time at the university working in the State of Wisconsin General Hospital, Madison, and the other half at medical centers in the state. About half of the latter time is spent in small communities working under an established doctor.

## GENERAL

**International College of Surgeons.**—The annual assembly of the United States Chapter of the International College of Surgeons will be held at Haddon Hall in Atlantic City November 8-11. On November 7 surgical clinics will be held in the leading Philadelphia hospitals.

**Ambulatory Fracture Association Meeting.**—The annual meeting of the Ambulatory Fracture Association will be held October 24-27 at the Royal York Hotel, Toronto, Canada, under the presidency of Dr. Custis L. Hall, Washington, D. C. Scientific papers, roundtable discussions and operative clinics are included in the program.

**Award Putnam Fellowship.**—Mrs. Molly M. Jones, Ph.D., Claremont, Calif., has been awarded the $2,600 Helen Putnam Fellowship for advanced research in genetics and mental health by Radcliffe College, Cambridge, Mass., for preparation of a book on the learning process in children and problems in their guidance. Mrs. Jones is director of the Mary B. Eyre Nursery School and associate professor of psychology.

**Mental Health Bulletin.**—The first *Bulletin of the World Federation for Mental Health* was published in February. The bulletin is to be published every two months at 5 shillings ($1) per year, post free, by the federation, 19 Manchester Street, London, W.1. It is the successor to the series of 12 bulletins distributed by the International Congress on Mental Health held in London in August 1948. The World Federation for Mental Health was organized in August 1948 with the founder members from 21 countries (THE JOURNAL, Dec. 4, 1948).

**Congress on Physical Medicine.**—The American Congress of Physical Medicine will hold its annual session September 6-10 at the Netherland Plaza Hotel, Cincinnati. All sessions will be open to members of the medical profession in good standing with the American Medical Association. The annual instruction courses will be held September 6-9 in two groups: One set of ten lectures will consist of basic subjects, and attendance will be limited to physicians; one set of ten lectures will be more general in character. Information may be obtained from the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Ill.

**Occupational Therapy Meeting.**—The American Occupational Therapy Association will hold its annual convention August 20-27 at the Book-Cadillac Hotel, Detroit. The general theme of the convention will be "Dynamic Forces in Occupational Therapy." Several symposiums are scheduled for Wednesday and Thursday: Wheels of Progress in Rheumatic Fever; Machinery for the Rehabilitation of the Tuberculous; Assembling Forces for the Cerebral Palsied Child; More Power for

Multiple Sclerosis; The Rehabilitation Center; Chest Surgery; Mobilizing Occupational Therapists; Epileptic Panel, and Psychodynamics of Primary Behavior Disorders of Children. The speaker at the banquet Wednesday at 7 p. m. will be Dr. Orus R. Yoder, Ypsilanti, "Blue Prints for the Future."

**"Spanish Swindle" Letters.**—According to the Post Office Department, addresses are being selected from lists of professional persons as recipients of the so-called "Spanish Swindle" letters. Ordinarily, reply to the first letter will bring a three page letter, with fake newspaper clippings and legal papers, intended to substantiate the writer's story concerning his imprisonment and arranging for the victim's arrival in Mexico, whereupon he is relieved of his funds by trickery or violence. Fraud orders are issued against these swindlers as the various names they use are reported to the Post Office Department. Such orders prohibit the dispatch of mail to the persons named and also prohibit the certification of payment of postal money orders drawn in their favor.

**Prevalence of Poliomyelitis.**—Reports of cases of poliomyelitis for the periods indicated have been received from the Division of Public Health Methods, U. S. Public Health Service:

| | Week Ended | | | Total to | | Total * | |
|---|---|---|---|---|---|---|---|
| Division and State | July 9, 1949 | July 10, 1948 | Median Expec. | July 9, 1949 | July 10, 1948 | March 19-July 9, 1949 | March 20-July 10, 1948 |
| New England States: | | | | | | | |
| Maine | 10 | .. | 1 | 21 | .. | 21 | .. |
| New Hampshire | 1 | .. | .. | 1 | .. | 1 | .. |
| Vermont | .. | 1 | .. | 3 | 2 | 1 | 1 |
| Massachusetts | 8 | 2 | 1 | 50 | 8 | 50 | 5 |
| Rhode Island | 1 | .. | .. | 2 | .. | 2 | .. |
| Connecticut | 4 | 2 | 2 | 15 | 4 | 12 | 3 |
| Middle Atlantic States: | | | | | | | |
| New York | 16 | 11 | 11 | 84 | 87 | 64 | 51 |
| New Jersey | 2 | 4 | 4 | 73 | 50 | 37 | 43 |
| Pennsylvania | 6 | 5 | 2 | 35 | 39 | 25 | 28 |
| East North Central States: | | | | | | | |
| Ohio | 12 | 15 | 7 | 31 | 60 | 25 | 51 |
| Indiana | 24 | 3 | 2 | 55 | 44 | 45 | 34 |
| Illinois | 19 | 12 | 6 | 74 | 45 | 58 | 38 |
| Michigan | 11 | 1 | 1 | 69 | 22 | 42 | 16 |
| Wisconsin | 10 | 4 | .. | 38 | 11 | 24 | 11 |
| West North Central States: | | | | | | | |
| Minnesota | 38 | .. | 2 | 135 | 22 | 96 | 14 |
| Iowa | 8 | 19 | 2 | 50 | 92 | 37 | 79 |
| Missouri | 17 | 2 | 1 | 58 | 15 | 47 | 15 |
| North Dakota | 5 | .. | .. | 30 | 3 | 26 | 3 |
| South Dakota | 2 | 4 | .. | 43 | 26 | 21 | 26 |
| Nebraska | 6 | 11 | 3 | 36 | 52 | 23 | 47 |
| Kansas | 25 | 6 | 2 | 73 | 26 | 47 | 23 |
| South Atlantic States: | | | | | | | |
| Delaware | .. | 5 | .. | 10 | 10 | 8 | 9 |
| Maryland | .. | .. | 1 | 14 | 1 | 5 | .. |
| District of Columbia | .. | 3 | .. | 4 | 3 | 3 | 3 |
| Virginia | 4 | 17 | 5 | 21 | 38 | 11 | 36 |
| West Virginia | 4 | .. | .. | 38 | 7 | 31 | 2 |
| North Carolina | 5 | 129 | 5 | 63 | 489 | 36 | 465 |
| South Carolina | 5 | 4 | 4 | 28 | 31 | 15 | 23 |
| Georgia | 7 | 5 | 5 | 33 | 38 | 25 | 37 |
| Florida | 6 | 4 | 4 | 79 | 67 | 57 | 50 |
| East South Central States: | | | | | | | |
| Kentucky | 13 | 5 | 4 | 42 | 21 | 34 | 18 |
| Tennessee | 21 | 6 | 4 | 60 | 32 | 54 | 25 |
| Alabama | 10 | 3 | 5 | 75 | 35 | 62 | 23 |
| Mississippi | 13 | 3 | 2 | 78 | 18 | 67 | 16 |
| West South Central States: | | | | | | | |
| Arkansas | 70 | 4 | 1 | 227 | 24† | 216 | 22† |
| Louisiana | 6 | 7 | 7 | 69 | 39 | 57 | 33 |
| Oklahoma | 74 | 21 | 6 | 271 | 44 | 264 | 40 |
| Texas | 121 | 89 | 21 | 907 | 735 | 816 | 714 |
| Mountain States: | | | | | | | |
| Montana | .. | .. | 1 | 8 | 15 | 7 | 5 |
| Idaho | 14 | 2 | .. | 66 | 51 | 53 | 24 |
| Wyoming | .. | 1 | .. | 7 | 7 | 7 | 7 |
| Colorado | 10 | 2 | 2 | 28 | 11 | 26 | 9 |
| New Mexico | 5 | 2 | 1 | 25 | 9 | 24 | 7 |
| Arizona | 2 | 3 | 1 | 23 | 19 | 12 | 18 |
| Utah | 1 | .. | .. | 53 | 11 | 37 | 8 |
| Nevada | .. | .. | .. | 2 | 1 | 2 | .. |
| Pacific States: | | | | | | | |
| Washington | 5 | 1 | 1 | 79 | 42 | 34 | 24 |
| Oregon | 5 | .. | .. | 50 | 25 | 34 | 9 |
| California | 58 | 92 | 18 | 545 | 447 | 256 | 415 |
| Total | 684 | 510 | ... | 3,881 | 2,878† | 2,957 | 2,530† |
| Median, 1949-1948 | ... | ... | 288 | 1,425 | | 1,028 | |

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* Last two columns show reported incidence since approximate average seasonal low week: 16 weeks.

† Figures changed by corrected reports.

**Special Society Elections.**—The American Psychiatric Association at its recent meeting installed Dr. George S. Stevenson, New York, as president and chose Dr. John C. Whitehorn, Baltimore, president-elect. Drs. Leo H. Bartemeier, Detroit, and Howard W. Potter, Brooklyn, were reelected secretary and treasurer, respectively.——The American Society for the Study of Arteriosclerosis has selected as officers for the coming year Drs. Irvine H. Page, Cleveland, president, and Otakar J. Pollak, Quincy, Mass., secretary-treasurer. The next annual meeting of the society will be held November 5-7 at the Knickerbocker, Chicago.——The American Neurological Association at its meeting in Atlantic City June 13-15 chose Dr. Henry W. Woltman, Rochester, Minn., president and Dr. H. Houston Merritt, New York, secretary-treasurer.

**Ernest Little to Receive Remington Medal.**—Ernest Little, Ph.D., Newark, N. J., past president of the American Pharmaceutical Association, professor of chemistry and former dean of Rutgers University College of Pharmacy, New Brunswick, N. J., has been named the twenty-seventh Remington Medalist. The medal will be conferred "in recognition of his tireless efforts on behalf of pharmaceutical education, for his sane and intelligent attitude toward pharmacy in all its subdivisions, for his excellent handling of students, for his work in establishing American Pharmaceutical Association student branches, and for his great interest in the general welfare of pharmacy." The Remington Medal Award is made by the New York Branch of the American Pharmaceutical Association. The presentation ceremonies will be held in New York City this fall. The gold medal is given in commemoration of Joseph P. Remington, who was chairman of the Pharmacopeia of the United States Revision Committee for several decades. Dr. Little was president of the American Foundation for Pharmaceutical Education for two years and is now a member of its Board of Grants. For several years Dr. Little was a member of the American Council on Pharmaceutical Education and served one term as vice president of that group. From 1930 to 1940 he was a member of the U. S. P. Revision Committee Since that time he has been a member of the U. S. P. Board of Trustees.

## LATIN AMERICA

**Congress of Anaesthesiology.** — The Second Argentina Congress and the First Latin American Congress of Anaesthesiology will take place in Buenos Aires, Argentina, October 16-23. One outstanding anesthetist from the United States, Canada and each of the most important Latin American countries will be invited to speak. The program arranged thus far includes Dr. R. Owen Elder, Buenos Aires, "Spinal Anesthesia," and Dr. Roberto A. Goyenechia, Buenos Aires, "Anesthesia in Surgery of the Chest." The Association of Anaesthesiology in Argentina is arranging the congress; the secretary is Dr. Italo Nunziata, Sarmiento 2135, 4° P. H., Buenos Aires.

**Argentina Congress on Obstetrics and Gynecology.**—The Seventh Argentine Congress of Obstetrics and Gynecology will be held October 23-29 at the Faculty of Medicine of Buenos Aires, J. E. Uriburu 955. The congress was organized by the Society of Obstetrics and Gynecology of Buenos Aires. Official speakers include the following:

J. Pereira and J. Baxán, Syphilis in Maternity Hospitals.
R. García Valenzuela and C. J. Duverges, Control and Management of Delivery.
V. Rodriguez and N. Arenas, Carcinoma of Endometrium.
J. J. Crottogini and J. L. Sardi, Genital Tuberculosis.

There will be an exhibit on obstetric and gynecologic subjects. The quota for titular members is 50 Argentinean pesos ($12) and for temporary members 30 pesos ($8). Further information can be obtained from the general secretary, Dr. A. Peralta Ramos (H), Séptimo Congreso Argentino de Obstetricia y Ginecología, Santa Fe 1171, Buenos Aires, Argentina.

# Marriages

Howard E. Wiener, Cedarhurst, N. Y., to Miss Marilyn Fenton of New York, June 2.

Donald Wray Spratt to Miss Anne Garside, both of Rochester, N. Y., May 5.

Matthew E. Morrow to Miss Sara Marion Watson, both of Jacksonville, Fla., April 8.

Robert S. Cleaver, Brewster, N. Y., to Miss Alma A. Hall in Binghamton, April 30.

Shaler Richardson to Mrs. Nada Coffee Bailey, both of Jacksonville, Fla., May 7.

# Deaths

**William Gerry Morgan** ⊕ President of the American Medical Association, 1930-1931, died at his home in Washington, D. C., July 7, aged 81. Dr. Morgan was born in Newport, N. H., May 2, 1868. He received his A.B. degree from Dartmouth in 1890 and was awarded his medical degree by the University of Pennsylvania Department of Medicine, Philadelphia, in 1893. After postgraduate work he began practice in Southport, Conn., in 1894. In 1899 he moved to Washington, D. C., and joined the faculty of Georgetown University School of Medicine, serving for many years as professor of gastroenterology, member of the board of regents and as dean from 1931 to 1935, when he retired with the title of dean emeritus.

Dr. Morgan was a member of the House of Delegates of the American Medical Association from 1920 to 1926, a past president of the Medical Society of the District of Columbia, American Congress of Internal Medicine, American Gastro-Enterological Association and the Clinico-Pathological Society. He was a councilor of the Southern Medical Association, a fellow, master, formerly a regent, governor, secretary-treasurer and vice president of the American College of Physicians. He was a member of the New York Academy of Medicine, Washington Academy of Sciences, of which he was vice president in 1919, the Association of Military Surgeons of the United States and the American Association of the History of Medicine. He was an honorary member of the New Hampshire Medical Society. In 1922 and in 1924 he was a member of the U. S. Annual Assay Commission and in 1935 was a United States delegate to the International Gastro-Enterological Society in Brussels. Dr. Morgan was chairman of the advisory draft board during World War I and joined the Army Reserve Corps, from which he retired in 1932 with the rank of major. He was a specialist certified by the American Board of Internal Medicine and was a consulting physician at Garfield Memorial, Gallinger and Georgetown University hospitals. The honorary degree of doctor of laws was conferred on him by the University of Pennsylvania and Georgetown University. Dr. Morgan was the author of "American College of Physicians: Its First Quarter Century" and "The Gastrointestinal Tract."

William Gerry Morgan, M.D.

**Benjamin Milton Cissel** ⊕ Brooklyn; born in Highland, Md., in 1893; Johns Hopkins University School of Medicine, Baltimore, 1919; instructor from 1924 to 1927, associate in 1927 and 1928, assistant clinical professor of surgery from 1928 to 1930, assistant clinical professor from 1930 to 1947, when he became associate professor of clinical surgery at the Long Island College of Medicine; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons and the New York Academy of Medicine; affiliated with the Swedish, King's County and Long Island College hospitals; died May 31, aged 56.

**Sydney Robotham Miller** ⊕ Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1910; an Associate Fellow of the American Medical Association; formerly on the faculty of the University of Maryland School of Medicine; specialist certified by the American Board of Internal Medicine; fellow and past president of the American College of Physicians; past president of the American Congress of Internal Medicine; member of the American Clinical and Climatological Association; served during World War I; on the staffs of the Union Memorial Hospital and the Hospital for the Women of Maryland; died May 25, aged 65.

**Edson Moses Abbott,** Rochester, N. H.; University of Vermont College of Medicine, Burlington, 1898; member of the American Medical Association; died in Frisbie Memorial Hospital May 14, aged 80.

**Franklin William Barrows** ⊕ Dumont, N. J.; University of Buffalo School of Medicine, 1893; member of Medical Society of the State of New York; at one time a member of the state department of education in Albany, N. Y., and school medical inspector at New Rochelle, N. Y.; a trustee of the Dixon Homestead Library; died May 25, aged 86, of lobar pneumonia.

**James Robert Bean,** Bend, Ore.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; member of the Idaho State Medical Association and the American Medical Association; formerly practiced in Wallace, Idaho, where he was secretary of the Shoshone County Medical Society, chairman of the school board, county health officer, city health officer and member of the staff of Providence Hospital; died in Portland April 14, aged 67.

**Corda Earl Beeman** ⊕ Grand Rapids, Mich.; Cleveland Homeopathic Medical College, 1903; fellow of the American College of Surgeons; on the staffs of Butterworth, St. Mary's and Blodgett Memorial hospitals, where he died May 9, aged 75, of benign hypertrophy of prostate and hypertension.

**Philip Leon Bereano,** New York; Eclectic Medical College of the City of New York, 1905; Long Island College Hospital, Brooklyn, 1909; served on the staffs of Morrisania City and Lebanon hospitals; founder and member of the medical staff of Jewish Home for Convalescents in Hudson, N. Y.; died in St. Luke's Hospital May 22, aged 70.

**Victor Joseph Blanchette,** Scottville, Mich.; Chicago College of Medicine and Surgery, 1907; member of the American Medical Association; died in Gerber Memorial Hospital in Fremont, May 4, aged 62.

**Byron H. Boone,** Acton, Ind.; Kentucky School of Medicine, Louisville, 1894; died May 19, aged 83, of carcinoma of the prostate.

**Jacob Byer,** New York; University of Maryland School of Medicine and College of Physicians and Surgeons, 1932; member of the American Medical Association; specialist certified by the American Board of Physical Medicine; served during World War II; formerly on the staffs of Veterans Administration hospitals in Legion, Texas, and Whipple, Ariz.; died May 7, aged 43.

**Joseph Rodwell Carver,** Dalton, Ga.; University of Georgia School of Medicine, Augusta, 1947; member of the American Medical Association; drowned in the Suwannee River at Branford, Fla., April 19, aged 30, when the boat in which he was cruising capsized.

**Edwin Crosby Chamberlin,** Brewster, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1894; died in the Milford (Del.) Hospital May 21, aged 79.

**Hugh W. Chaney,** Sugar Tree Ridge, Ohio; Hospital College of Medicine, Louisville, Ky., 1903; member of the American Medical Association; died in Highland Community Hospital, Hillsboro, May 3, aged 78, of cerebral hemorrhage.

**Ivra Allen Clark,** Camden, Ark.; Meharry Medical College, Nashville, Tenn., 1914; died in the Mayo Clinic, Rochester, Minn., May 5, aged 66, of uremia and hypertrophy of the prostate.

**Frank Jennings Cornelius** ⊕ Olympia, Wash.; State University of Iowa College of Medicine, Iowa City, 1923; served during World Wars I and II; affiliated with St. Peter's Hospital, where he died April 21, aged 49, of cerebral embolus.

**James Gardner Culpepper,** Moultrie, Ga.; University of Georgia Medical Department, Augusta, 1891; for many years served as county physician; died March 31, aged 80.

**Martin Dominic Currigan** ⊕ Denver; University of Colorado School of Medicine, Denver, 1912; fellow of the American College of Surgeons; at one time regent at his alma mater; on the staff of St. Joseph's Hospital, where he died May 12, aged 61, of dissecting aneurysm of the ascending aorta with rupture into pericardium.

**Medus Monroe Davis**, Indiana, Pa.; Jefferson Medical College of Philadelphia, 1893; member of the American Medical Association; served during World War I; formerly county coroner; died May 9, aged 81, of coronary thrombosis.

**John MacArthur Dunsmore**, Barrington, R. I.; Trinity Medical College, Toronto, Ont., Canada, 1898; member of the Missouri State Medical Association and the American Medical Association; specialist certified by the American Board of Psychiatry and Neurology, Inc.; died in Providence May 16, aged 78, of fracture of a lumbar vertebra received when he slipped in the bathtub.

**William Henry Elliott**, Bunceton, Mo.; Barnes Medical College, St. Louis, 1899; served as a member and president of the local school board; died May 27, aged 73, of a ruptured spleen following a fall.

**Charles H. Fairbanks**, Grand Rapids, Mich.; Grand Rapids Medical College, 1899; served on the staff of Blodgett Memorial Hospital; died May 2, aged 89, of chronic arteriosclerotic myocarditis.

**Tom Keller Farnsworth**, Long Beach, Calif.; State University of Iowa College of Medicine, Iowa City, 1924; on the staff of Community Hospital; died April 16, aged 48, of heart disease.

**William S. Green**, Ridgewood, N. J.; University of the City of New York Medical Department, New York, 1887; formerly practiced in Paterson, where he was for many years associated with the board of health; died in St. Joseph's Hospital, Paterson, June 2, aged 87.

**Washington G. Hammond**, Telephone, Texas (licensed in Texas under the Act of 1907); died May 8, aged 80.

**Alfred Paul Hancuff** ⊕ Toledo, Ohio; Ohio State University College of Medicine, Columbus, 1917; fellow of the American College of Surgeons; served as president, secretary and member of the council of the Academy of Medicine of Toledo and Lucas County; affiliated with Mercy, Maumee Valley, St. Vincent's and Lucas County hospitals; died May 9, aged 56, of coronary occlusion.

**George Blight Harrison** ⊕ Fredericksburg, Va.; University of Maryland School of Medicine, Baltimore, 1905; past president of the Northern Neck Medical Association; served during World War I; affiliated with Mary Washington Hospital; died May 17, aged 68, of coronary thrombosis.

**John Henry Hartnett** ⊕ Worcester, Mass.; Tufts College Medical School, Boston, 1911; served as a member of the board of health; affiliated with Belmont Hospital and St. Vincent Hospital, where he died May 10, aged 73, of cerebral hemorrhage.

**Herbert Hodge Haynes** ⊕ Clarksburg, W. Va.; College of Physicians and Surgeons, Baltimore, 1908; served as vice president of the West Virginia State Medical Association; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; served during World War I; on the staff of St. Mary's Hospital, where he died June 2, aged 71, of coronary occlusion.

**Johnson Washington Hill**, Boston; College of Physicians and Surgeons, Boston, 1908; died May 12, aged 74.

**Elizabeth M. Hocker**, Cincinnati; Laura Memorial Woman's Medical College, Cincinnati, 1897; served overseas during World War I as an anesthetist in an Army hospital unit; for many years on the staff of Christ Hospital; died May 22.

**John Woodford Holloway** ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1923; assistant clinical professor of surgery at his alma mater; fellow of the American College of Surgeons; on the staff of Lakeside Hospital; died June 2, aged 53, of cerebral hemorrhage and hypertensive cardiovascular disease.

**Lloyd William Johnson** ⊕ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1913; fellow of the American College of Surgeons; on the staff of Allegheny General Hospital; died June 6, aged 62, of cardiac failure.

**William Elijah Johnson**, Altadena, Calif.; University of Colorado School of Medicine, Denver, 1913; fellow of the American College of Surgeons; died in Beverly Hospital, Montebello, April 7, aged 60, of coronary thrombosis.

**Corban Eaton Judd**, San Jose, Calif.; Rush Medical College, Chicago, 1898; formerly practiced in Topeka, Kan., where he was secretary of the Shawnee County Medical Society and was on the staff of Stormont Hospital; died April 20, aged 73, of cerebral hemorrhage.

**Ernest Kohn**, Grover Hill, Ohio; Fort Wayne College of Medicine, 1894; member of the American Medical Association; member of the county board of health; died May 10, aged 78, of carcinoma.

**Homer Jonas Rhode** ⊕ Reading, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1901; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; specialist certified by the American Board of Ophthalmology; served on the staffs of Reading and St. Joseph's hospitals; died in Miami, Fla., June 3, aged 71, of coronary thrombosis and diabetes mellitus.

**Sterling Ruffin** ⊕ Washington, D. C.; Columbian University Medical Department, Washington, 1890; professor of medicine at his alma mater, now known as George Washington University School of Medicine, for many years and later became professor emeritus; past president of the Medical Society of District of Columbia; member of the American Clinical and Climatological Association; senior director of Riggs National Bank; on the staffs of Garfield Hospital and George Washington University Hospital, where he died May 31, aged 82, of cerebral thrombosis.

**Philip Hamblin Smith** ⊕ Evanston, Ill.; Northwestern University Medical School, Chicago, 1927; member of the Central Association of Obstetricians and Gynecologists; fellow of the American College of Surgeons; associate in obstetrics and gynecology at his alma mater; specialist certified by the American Board of Obstetrics and Gynecologists; on the staff of Evanston Hospital; died May 24, aged 49.

**William Henry Specht**, Germantown, N. Y.; Cornell University Medical College, New York, 1906; formerly on the staff of the Park East Hospital in New York; died while on a fishing trip in Canada, May 19, aged 67.

**Anne Heath Thomas** ⊕ Colorado Springs, Colo.; Woman's Medical College of Pennsylvania, Philadelphia, 1905; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; formerly on the faculty of her alma mater; died in the Glockner Hospital May 21, aged 76, of diverticulitis of the sigmoid with perforation.

**Joseph Browning Thornell** ⊕ Council Bluffs, Iowa; University of Nebraska College of Medicine, Omaha, 1927; served during World War I; affiliated with Jennie Edmundson Memorial Hospital; died May 20, aged 60, of carcinoma.

**James William Thornton**, Sacramento, Calif.; John A. Creighton Medical College, Omaha, 1899; served during the Spanish-American War and World War I; formerly affiliated with the U. S. Public Health Service, reserve, and on the staffs of various Veterans Administration hospitals; died May 14, aged 74.

**Charles Todd**, Glen Arbor, Mich.; Northwestern University Medical School, Chicago, 1896; died in Traverse City April 26, aged 79, of chronic peptic ulcer, with hemorrhage.

**May Gibson Waters**, Hamlet, N. Y.; University of Buffalo School of Medicine, 1903; died April 15, aged 79, of metastatic carcinoma.

**William J. Whitefort** ⊕ St. Elmo, Ill.; Missouri Medical College, St. Louis, 1898; served during World War I; died May 22, aged 74, of chronic myocardial insufficiency.

**Paul Vintcent Woolley**, Excelsior Springs, Mo.; University Medical College of Kansas City, 1905; formerly police surgeon in Kansas City; served during World War I; died in the U. S. Naval Hospital in Corona, Calif., May 4, aged 68, of carcinoma of the left lung.

**Dee D. Worden**, Louisville, Ky.; Kentucky University Medical Department, Louisville, 1906; member of the American Medical Association; on the staff of St. Joseph Infirmary; on the courtesy staffs of the Kentucky Baptist and Jewish hospitals; died April 28, aged 68, of cirrhosis of the liver.

**Hubert Lee Wyatt**, China Grove, N. C.; Medical College of Virginia, Richmond, 1916; member of the American Medical Association; served during World War I; died in the Rowan Memorial Hospital, Salisbury, May 2, aged 58, of coronary thrombosis.

**August Karl Zinn**, Ypsilanti, Mich.; University of Michigan Medical School, Ann Arbor, 1925; member of the American Medical Association; served during World War II; affiliated with the Beyer Memorial Hospital, where he died May 15, aged 47, of carcinoma of the cecum.

# Foreign Letters

## BELGIUM

*(From Our Regular Correspondent)*

June 16, 1949.

### Coordination of International Medical Conventions

The first assembly of the permanent Council for the Coordination of the International Conventions of Medical Sciences will be held in Belgium. It is the result of numerous discussions held by international scientific societies to formulate the fundamental principles on which this new organization is to be founded.

UNESCO took the initiative at the first meeting, which was held in 1947, and called a preparatory conference of presidents and delegates of the seventeenth International Congress of Medical Sciences, which at this time had resumed its activity. Today the aim of the combined efforts of O. M. S. (Organization of Medical Sciences) and UNESCO is different. It is no longer a question of trying to fuse but to coordinate the work of different specialties, which work in very diverse ways and at the same time are to aid and sustain the respective international organizations.

The committee of organization of the permanent Council for the Coordination of the International Congress of Medical Sciences considers it necessary: (1) to coordinate the international congress with respect to the choice of dates, locations and special subjects of common interest; (2) to keep informed about all conventions, conferences and reunions organized by the international scientific unions which concern related sciences and coordinate them with the reunions concerned with medical sciences; (3) to concern itself with all problems presented by the material and technical organization of conventions, and (4) to serve as a channel for the material aid which UNESCO and O. M. S. can supply to reunions and to the international congresses with the aim to facilitate their meetings and to permit their members and the invited specialists to take part therein.

The future council will have: (1) the task of information (place, date, subjects, and reporters of congresses) and establishment of agendas; (2) the task of material financial and technical aid; (3) the task of diffusion (editions, translations and reports) and (4) the task of favoring certain orientations. Under this last item are (*a*) symposiums—small conferences in which scientists of various disciplines study a subject with the aim of going deeper into a problem and opening up new horizons for investigators; (*b*) orientation of efforts with the view of improving the technics in studying different technics at the same time and in the same place; (*c*) participation of those who attend a congress in the medical life of the country in which the congress is held and reciprocal postgraduate instructions, and (*d*) information to the general public, not by the old and mediocre methods of popularization, but by a sane cultural education.

A large part of the efforts of the assembly was devoted to the elaboration and the acceptance (subject to the approbation of the participating organization) of the statutes and regulations of the interior order of the new World Council. The location of the next general assembly has been designated by the assembly. It will be in Geneva in 1952.

### Cancerigenic Substances

At the medical meeting of the Society of Stomatology, Professor Maisin presented a summary of the knowledge of the cancerigenic agents. He subdivided them into cancerigenic agents of known chemical composition, among which there are the hydrocarbon derivatives of anthracene, benzopyrine, cholanthrene and phenanthrene.

It is remarkable that small differences in the structural position of a group permits one to obtain a cancerigenic substance or a substance which does not have this characteristic.

There are also cancerigenic nitrogen compounds, for example, the derivatives of carbazole, and, in this respect, such substances as butter yellow, which is utilized in the food industries and produces cancers of the liver, as well as other anilines, such as amber yellow, which is utilized for coloring oils, and even the light greens have been recognized as being cancerigenic, when injected subcutaneously.

Aside from these numerous substances, there are others of unknown formulas, such as the products of various substances present in the liver and even the products of the combustion of meats; this suggests that one can perhaps ingest cancerigenic substances. Aside from these compounds with more or less complex formulas, there exist simple substances, such as the metals: chromium, cobalt and metallic arsenic.

Finally, he discusses the role of hormones, especially female hormones, in the genesis of cancer of the breast.

### Number of Physicians

The report of the University Foundation for 1948 has provided some interesting figures. In the four Belgian universities, 1,038 students were registered for the first year medical course during the present year. In the second year the total number was 646. For the third year the total was 603. Thus the great reduction takes place after the first year; this can be explained easily. The population of the subsequent years (there are seven years of study) present fluctuations that are doubtlessly due to the war. In the fourth year the total was 498 students; in the fifth year 292 students; in the sixth year 374 students, and in the seventh year 385 students.

The discussion published in the *Scalpel*, the oldest medical journal of Belgium, comments on these facts as follows: It would appear that in two years the figure will increase approximately 25 per cent and one can foresee that in three years nearly 500 new physicians will come out of the medical faculties.

With this outlook it will be necessary to give serious thought to the rational organization of the profession and take account of the openings which may be offered in the services in the Congo, the extension of the health services and the progress in the organization of hospitals.

### Colonial Medical Center

To guarantee the objective recruiting and the medical supervision of personnel sent to the colonies, the Colonial Medical Center, created in 1948, has modified its regulations. The present colonial organization bearing the title Colonial Medical Center performs all examinations with a view to establishing suitableness for life in the colony or to determine whether the person has the physical condition required of employees of the colony, proceeds with the detection and treatment of disorders resulting from living in the tropical regions, gives medical care to the personnel of the colonial administration and keeps up to date the medical records on the personnel of the colonial administration.

### International Art Exhibit of Physicians

Since the liberation we have had an exhibit of paintings and sculpture for the fourth time. This has almost become a national event in our country, in which the history of the fine arts is closely allied to the life of the nation.

This year the art exhibit, which has taken an important place in the artistic movement, was held at the grand Palais at Liège. This fourth exhibit represents considerable progress over the preceding ones, and the critics have been unanimous in drawing attention to the incomparable work of Dr. Vandervael, who is considered a painter of great talent.

# Correspondence

## LATE RADIATION EFFECTS IN ROENTGEN THERAPY FOR HYPERTHYROIDISM

### Their Possible Bearing on the Use of Radioactive Iodine

*To the Editor:*—Radioactive iodine, especially the isotope of 8 day half-life, $I^{131}$, has been employed in the treatment of hyperthyroidism in several clinics during recent years, a total of several hundred patients probably having received the material. The question of the possibility of late radiation changes leading to malignant degeneration has been raised and cannot be disregarded. Serious sequelae to radiation therapy usually appear several years after the treatment; hence such damage from radioiodine would not be expected for some time. If it is to be feared that this will be a serious hazard, the use of the material ought to be very sharply restricted until sufficient time has elapsed to ascertain the late results in persons already treated. On the other hand, if any pertinent evidence can be obtained from the already large experience with roentgen rays, it should be made available.

With this in mind, a questionnaire was sent out to a group of radiologists and thyroid specialists who might have had long term experience in the treatment of toxic goiter with roentgen rays. The questions were as follows:

1. Have you ever seen a cancer arise in a thyroid gland, in a case of hyperthyroidism which had been previously treated with roentgen rays? If so, was the gland nodular?

2. Have you ever seen a cancer arise in adjacent structures in a case of hyperthyroidism previously treated with roentgen rays?

3. Have you ever seen a cancer arise in a normal thyroid gland, when that region had been in the field of roentgen ray treatments for another condition?

4. Have you ever seen a cancer of the thyroid develop in a patient who has undergone any treatment for hyperthyroidism other than radiation? If so was the gland nodular? If the answer to any of these questions is YES, please send a detailed case history.

Responses were received from 70 radiologists and 31 thyroid specialists; of these latter, 4 declared themselves unqualified to give information. A total of 71 (53 radiologists and 18 medical specialists) returned a categoric NO to all questions. Some of these volunteered that their experience was small; others stated that their series contained several hundred cases, followed over many years. The remaining 30 answered NO to most of the questions, but made some positive statements which should be analyzed in detail.

In answer to the first question, 10 cases were reported of cancer arising in thyroid glands in which roentgen rays had been previously given for hyperthyroidism. These merit individual consideration:

1. A young woman treated about 1920; no details were given.

2. A woman treated in 1916; extensive carcinoma of the thyroid in 1945.

3. Gland nodular; no further data were given.

4. A woman of 50; roentgen treatment for exophthalmic goiter; no details of dosage were given. Three or four years later death occurred from tracheal obstruction; at autopsy cancer of the thyroid was seen.

5. A man, of unknown age, treated in 1934 with six roentgen exposures for toxic adenoma. In 1938, inoperable cancer was discovered, but no skin changes from roentgen therapy.

6. A girl, 14 years old, received six or eight roentgen treatments for toxic goiter in 1918. In 1938, operation for what was thought to be advanced toxic goiter revealed cancer. No skin changes followed roentgen treatment.

7. A patient, 47 years old, had three or four roentgen treatments for toxic thyroid in 1923. In 1944, advanced adenocarcinoma was seen. No skin changes due to the roentgen rays were seen.

8. A young woman was treated in 1925-1926 with eleven exposures about three weeks apart, about 200 r to the thyroid each time. In 1945 carcinoma was discovered, but no skin changes due to roentgen rays.

9. A woman, 24 years old, was treated in 1921 for classic toxic diffuse goiter (Graves disease). The patient stated that she had had eighteen treatments at weekly intervals. In 1933, during her second pregnancy, symptoms of toxicity recurred; the gland was then thought to be nodular; at operation, carcinoma was found, but no skin changes due to roentgen rays.

10. A woman, 68 years old, was treated in 1937 for "swelling in the thyroid region." The patient stated that she had had 30 to 40 treatments over a two year period. Some skin changes in the irradiated areas were seen. In 1947 an anaplastic solid carcinoma of the thyroid was observed.

To summarize these 10 cases, no definite information is available about the first and second; in the third and fifth there were nodular glands, in which cancer is known to arise with some frequency. In the fourth and fifth cases cancer was found within three or four years, which is early for the development of radiation-induced cancer when dosage has not been excessive. In the fifth, sixth and seventh few treatments had been given; it is doubtful whether the doses were large enough to cause late damage. Thus the last 3 (8, 9, 10) are the only ones in which the history indicates even the possibility that roentgen rays were implicated in the production of the cancer. Only 1 of the 10 patients apparently showed any late skin changes due to the roentgen rays (although this has been observed in a considerable number of patients treated for hyperthyroidism in the 1920's). However, it cannot be definitely stated that the radiation had nothing to do with the development of a malignant condition in any of these persons.

In response to the second question, eight radiologists reported having seen cancer of the skin of the neck following roentgen treatment for hyperthyroidism; some of these stated that they had seen several cases. In addition, 2 cases of cancer of the larynx were reported, and 1 each of esophagus and trachea. Details of therapy are not available for the 2 in whom cancer of the larynx developed. The patients with cancer of the trachea and esophagus, women of 34 and 28 years, respectively, in 1925 and 1921, received fairly heavy irradiation for hyperthyroidism. Both later showed pronounced telangiectasia in the irradiated skin; their cancers developed about twenty years after the treatments had been given.

As to the third question, no one had seen cancer produced in a normal thyroid gland which fell within the field of irradiation for some other malignant condition, such as cancer of the larynx. Several radiologists in discussing this question stated that they must have irradiated many normal thyroids in this manner, with radiation doses far in excess of any employed in hyperthyroid therapy, that some of these patients had been under observation for a good many years (ten or more) and that they have never seen any effect on the gland.

In answer to question 4, nine physicians or radiologists had seen cancer arise in hyperthyroid glands treated otherwise than by irradiation. Both surgical and medical treatments were specified. Some cases were stated to have been of toxic nodular goiter, but 2 were stated to have been of primary hyperplastic, not nodular, goiter.

From this response of 101 radiologists and thyroid specialists to a questionnaire regarding the late malignant changes following roentgen treatment of hyperthyroidism, it is apparent that, if the complication exists, it is very rare. In applying the results of this survey to the use of radioactive iodine in the treatment of this disease, it must be realized that radiation doses from roentgen rays and from $I^{131}$ may be quite different. Externally administered roentgen rays bathe the gland with a fairly uniform radiation. Radioautographs show that radioactive iodine may be deposited in a very spotty manner, so that some regions receive much more radiation than others. A survey of modern roentgenologic technics indicates that a dose to the gland of about 3,000 to 3,500 r is considered adequate. However, it appears that, with $I^{131}$, doses of the order of 5,000 to 6,000 equivalent roentgens are necessary. (The equivalent roentgen is the amount of beta radiation which produces the same ionization per gram of air as 1 roentgen of roentgen rays.) If this is because some cells of the gland do not concentrate as much of the radioactive isotope as others, and these must achieve a certain minimum dosage, then other cells may have received as much as 20,000 to 30,000 equivalent roentgens. It is not known as yet whether the biologic effectiveness of a certain number of equivalent roentgens from an internal isotope irradiation is the same as that of the same number of roentgens from externally administered roentgen rays.

In conclusion, it appears that the possibility of late malignant degeneration is negligible following roentgen therapy for toxic goiter. It may be presumed that the hazard is not much greater for radioactive iodine therapy, but this cannot be verified for a number of years. Only a long term follow-up of an extensive series of cases will finally determine the safety or danger of this procedure. Accordingly, for some years at least, everyone employing this method should make all possible efforts to follow cases persistently. In the meantime the material should not be used indiscriminately. Reasonable criteria should be established for the selection of patients, and dosage levels should be based on careful calculations. In addition, careful histologic study of any thyroid material obtained at operation or autopsy at both short and long intervals after $I^{131}$ therapy should be undertaken.

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New York City.

## EFFECTS OF EMOTIONS ON GASTRO-INTESTINAL PHYSIOLOGY

*To the Editor:*—The writing of this letter is prompted by the editorial entitled "A Female Alexis St. Martin" which appeared in the June 11 issue of THE JOURNAL. There are errors of fact and errors of logic in this editorial.

The statement is made, ". . . in all men previously studied, beginning with Alexis St. Martin, resentment, anger and similar emotions were nearly always followed by hyperemia, hypermotility and hypersecretion of the gastric mucosa." Quite to the contrary, Beaumont records only inhibition of gastric motor and acid secretory activity accompanying emotional storms in Alexis St. Martin.

Actually, aside from the writings of Wolf and Wolff there are only a few incidental or poorly documented references to the occurrence of hyperactivity of the stomach at times of emotional stress. In contrast with the abundant evidence showing depression of gastric movements and secretion during affective states, the existence of the phenomenon of heightened activity as a concomitant of emotional upsets is poorly supported by evidence.

Finally, I wish to point out the logical fallacy involved in the notion that the recent findings of Crider and Walker indicate that a sex difference exists in regard to the effect of emotions on gastric function. When one says that a sex difference exists for any set of observations, this means that a correlation exists between the sex of the subjects and the presence or absence of some attribute. Now a correlation can be established only on the basis of the observation of a sizable number of subjects. To conclude, even as a conjecture, that a sex difference exists on the basis of the observation of one female subject is nonsense.

M. I. GROSSMAN, M.D., Chicago.

COMMENT.—Part of the purported error of fact referred to is probably due to unexpressed differences in various emotional states. True, depressive states have long been known to produce inhibition in the gastric activity. Emotions associated with internal conflict, such as resentment, unexpressed anger, anxiety, etc., tend, in the male stomach at least, to provoke the opposite reaction. True also, Wolf and Wolff were probably the first to clearly differentiate this difference in gastric response to emotion. It was the stimulatory effect of resentment, etc., to which the female patient reacted so differently.

In regard to the purported error of logic, conclusions were not drawn from this case, only a suggestion as to a possible relation. It would indeed be a sad state of affairs if conjectures and surmises were excluded from thinking. If this were so, many ideas and theories which eventually prove scientifically sound would never have reached the light of day.—ED.

# Medical Motion Pictures

## FILM REVIEWS

**Why Won't Tommy Eat?** 16 mm., color, sound, 594 feet (1 reel), showing time nineteen minutes. Produced in 1948 by Crawley Films for the Department of National Health and Welfare. Procurable on rental or purchase from the National Film Board of Canada, 620 Fifth Avenue, New York 20, and 400 West Madicon Street, Chicago 6.

This film portrays the relationship between the mother and child in diet problems. It illustrates the problem of a child who refused to eat properly and traces in detail the foundation of food habits to his early childhood. Finally it brings out that because of the mother's tense and impatient manner in handling the child she herself is the crux of the problem and must learn to understand her child's personal requirements both at meal times and with respect to his entire home life. This production can be recommended for showing to medical students, nurses and teachers where children eat in school, as well as social workers, parent-teachers' association, children guidance study groups and classes in family living at the senior high school and college level. Physicians will be interested in this film as a means of education of parents in relation to their important problem. The photography is very good.

**Invisible Armour.** 16 mm., black and white, sound, 706 feet (1 reel), showing time twenty minutes. Produced in 1948 by the National Film Board for the Department of National Health and Welfare, Ottawa. Procurable on rental or purchase from the National Film Board of Canada, 620 Fifth Avenue, New York 20, and 400 West Madison Street, Chicago 6.

This is a documentary film showing excellent technics of community organization. The procedures used in this diphtheria immunization campaign serve as a pattern for any similar health project. High school students act as publicists; churches and schools place the issue before parents, a committee makes a house to house survey and service clubs provide "toxoid taxis." Community awareness of a public health problem has been a motivating factor in stimulating community action to promote a successful immunization campaign. The settings, narration and situation definitely identify the film as being of Canadian origin, although a program of this kind could be applied to any section for any type of epidemic. From a health education standpoint, there should have been some mention of a child's routine visits to the family doctor. This motion picture should prove helpful and interesting to groups involved in community organization. Photography is good and narration is satisfactory.

# Bureau of Medical Economic Research

## MEDICAL ECONOMIC REVIEWS AND ABSTRACTS

Prepared by the Staff of the Bureau of Medical Economic Research

**The Development of Unemployment Insurance in the South.** By W. R. Curtis. South. Econ. J. 15: 43-53 (July) 1948.

This article attempts to evaluate the present social security measures with a view to determining the advisability of suggested changes.

A Wisconsin unemployment insurance law was passed in 1932; the Social Security Act was passed in 1935. In the South evidences of public interest prior to this time are lacking.

The Southern states were forced to accept enactment of state *laws by the provision that they could offset state tax against* the national tax up to 90 per cent of the federal levy by so doing. Although the Southern states are to be commended in this step, their coverage, amounts of benefits and conditions of eligibility have increased less rapidly than in other states. Coverage is one third in comparison with one half in the other states, largely because of the agricultural population, which is excluded from the act. Benefits are less now in amounts and durations. While other states have increased the maximum benefits from $15 a week, until half grant more than $20, only 31 per cent of the Southern workers are in states granting these benefits.

Although the maximum yearly benefits for 86 per cent of the workers as a whole are $350 or more, only 26 per cent of the Southern workers have acquired these benefits.

From the evidence of the widening gap between the provisions of the Southern states and those of the rest of the nation, the author concludes that Social Security has not been completely accepted by the public as elsewhere, making it probable that in the advent of the present proposal to change the 90 per cent offset against federal tax to 100 per cent, the gap would widen even more, until Southern industrialization lessened it. In addition, the author objects to this proposal on the ground that it would be difficult to retain national interest without federal financial participation.

Although the article serves to point out the limitations of the current proposal and the South's dual need for broader coverage and more liberal benefits, the side remark that over a ten year period, even in the Southern states, 2 per cent has been proved an adequate federal taxation is not supported by good evidence. The plan has not yet been tested in a time of depression.

**The Distribution of Physicians and Physicians' Services in Colorado, 1948. (Preliminary report.)** By. H. J. Dodge, M. M. Clapper and W. Darley. Rocky Mountain M. J. 45: 557-563 (July) 1948.

This report by the University of Colorado School of Medicine is a noteworthy contribution to knowledge on the distribution of physicians and medical service. The report presents an integrated picture of the total number of physicians, their status in practice and distribution by age, by size of community and by specialization. An effort is made to evaluate socioeconomic relationships between distribution of physicians and size of community, density of population and income status of the population. On a statewide basis, at least in Colorado, proportionately equal numbers of younger physicians have established practices in communities of various sizes, refuting the general statement that younger men are not establishing themselves in small towns. Perhaps this is a result of the University's long range program of emphasizing the training of general practitioners to meet the needs of its resident population.

Two charts and one table present the results of thinking through the problem of population-physician ratios. By the arbitrary county system of computing population-physician ratios, the range was between 380 and 6,200 persons per physician, with three counties listed as without available physicians. The researchers *did not think in terms* of arbitrary boundaries around each of the sixty-three counties, but delineated a total of fourteen medical service areas, including up to ten counties in each area. In fourteen medical service areas the ratios were found to range from a low of 450 persons per physician in the Denver metropolitan area to 1,890 in a relatively depleted area. One might question, however, whether the simple amalgamation of whole counties into larger geopolitical units is the most accurate means of establishing economic areas, for either medical service or any other type of consumer purchases. This following of county boundaries without exception seems contradictory to their statement that "it was necessary to recognize the fact that medical service does not stop at city, county or even state boundaries, so that one must consider medical service in terms of areas."

This report is only the first in a series on the problems of professional resources in the state. The study is being made with the cooperation of the School of Medicine, the Colorado State Medical Society, the Colorado State Board of Medical Examiners and the Colorado State Board of Basic Science Examiners.

**The Health Officer in Post-War Britain.** By Sir Allen Daley. Am. J. Pub. Health 38: 325-330 (March) 1948.

The reorganization of Britain's public health system represents a radical departure from schemes of the past. This new program consists of three main parts.

1. Hospital and Specialist Services: At present, hospital services are provided by local authorities, supplemented in most areas by voluntary hospitals. Plans are now drawn for a central government to take over all hospitals not run for private profit, on the theory that competition between municipal and voluntary institutions will disappear and that larger areas will reduce administrative and financial problems. The country will be divided into fourteen hospital regions, each governed by a regional board, nominated by the Minister of Health. This board will, in turn, delegate the functions of management to local committees, each responsible for one thousand beds. All specialists will have hospital attachments and will be under supervision of the regional boards.

Under this revised plan, medical officers will no longer control cases of tuberculous infection and tuberculosis hospitals. They will depend on the cooperation of the management committees.

2. General Practitioner Service: Previously, general practitioners operated under the jurisdiction of a local insurance committee, one of which existed for each local health department. Physicians and dentists have always fought control of the committees by medical officers, and in 1912 the representation of the local authority was reduced. Under the new program, it will again be increased to one third of the total number on the committees, although the medical profession will retain some strength in the councils.

3. Local Health Authorities: The local health authority will continue to control and develop environmental health services. These include child welfare, midwifery, visiting, home nursing, after-care, ambulance and immunization and vaccination services. In addition, health centers will be organized on a local basis under which general practitioners will engage in group practice. Doctors and dentists will be paid by executive councils, and conditions of service will be settled by negotiations between the Ministry of Health and the professions.

This drastic reorganization creates many new problems. The separation of health and hospital services necessitates liaison committees and conferences, taking up time that might otherwise be spent in executive or field work. After the plan is put into operation, many changes may be required before it can be regarded as more than an experiment.

**International Trends in Health Care.** By J. B. Grant. Am. J. Pub. Health 38: 381-397 (March) 1948.

The International Health Division of the Rockefeller Foundation has surveyed twelve leading countries (Australia, Canada, Denmark, England, Finland, France, The Netherlands, New Zealand, Norway, Sweden, Switzerland and the United States) in a study of the work and literature on health care. *The* foundation defines the aim of health care as "the full development and maintenance of man's mental and physical capacity," including in its scope nonmedical as well as medical factors. This principle is widely accepted today and is a part of the policy of most medical organizations, among them the American Medical Association.

*Nonmedical Factors.*—1. General Security: Social welfare legislation has generally preceded legislation based on strictly medical considerations. Today, New Zealand, Britain, France, and Sweden—as leaders in this field—provide cash allowances for families, free school meals and milk, maternity grants and home aid services. Under the British National Insurance Act of 1946, social insurance costs will require 10 per cent of the national income; in the United States, 1946 federal expenditure on social welfare amounted to 1 to 3 per cent of the national income.

2. Housing: The most "advanced" government housing policies are based on the social welfare concept of population needs. Sweden typifies this policy in its government subsidies to keep rents below 20 per cent of wages and in its system of family rent allowances.

3. Nutrition: All European countries, led by Great Britain and Sweden, are adopting food policies including free or subsidized protective foods to low income groups, free school lunches and price control backed by government subsidies.

4. Recreation: Britain is the leader in the field of mental, social and physical recreation, with an increasing number of community centers, mandatory under the Education Act of 1944.

5. Education: All twelve countries surveyed have either health "propaganda" or school health instruction. In the new workshop technic developing in the United States and Canada, community leaders discuss medical care materials under the direction of trained personnel.

The trend emerging from this nonmedical legislation is toward a welfare program based on a population policy designed to improve the quality of the people by removing the causes of social ills.

*Medical Factors.*—The Rockefeller Foundation lays down three prerequisites for the provision of medical service: removal of any economic barriers, adequate and geographic distribution of medical facilities and personnel and high technical excellence of the personnel and their tools.

1. Removal of Economic Barriers: The major defects in medical insurance plans found by the Rockefeller Foundation survey are: insufficient numbers of trained personnel to implement the plans, legislation for sickness rather than for health and inadequate provision for chronic, mental and rehabilitation services.

2. Geographic Distribution of Facilities and Personnel: The chief aspects considered here are regionalization of institutions, bed requirements and the number and functions of health centers.

Regional distribution of facilities has been recognized as a need in several of the countries surveyed. The over-all pattern now emerging consists of institutions at three or four levels, with health centers at the outskirts, community and district hospitals throughout the area and a teaching base hospital at the center. The base hospital provides refresher and training courses to physicians and technical personnel and holds pathologic conferences and teaching clinics. It lays down staff requirements for the smaller hospitals and provides specialists to supervise their personnel. This scheme, although not yet fully developed, should establish complete diagnostic service and continuation and graduate education.

Hospital bed requirements vary from community to community, but the estimate of the Hospital Council of Greater New York—16.1 beds per thousand population—agrees with the results of several other surveys conducted in both the United States and abroad. Recent studies have been made to determine the number of beds needed for mental, chronic and rehabilitation services. The United States is well in advance of other countries in establishing standards for hospitals.

Health centers are the determining factor in community health care. British estimates of the size of the urban population to be served by each center differ from 10,000 to 25,100 persons. The United States Survey and Construction Act provides one rural health center for a population of 30,000—a conservative estimate compared with that of other countries.

3. Medical Personnel—Numbers and Training: Technologic advances in the past century have brought into existence a number of auxiliary medical workers. These include nurses, medical and psychiatric social workers, dietitians, occupational and physical therapists, medical record librarians, medical and dental laboratory assistants, x-ray technicians and dental hygienists. The United States is still the only country requiring registration of such personnel.

Approximate figures as to the number of doctors and dentists required for a given population have been reached by empiric methods. A mean estimate may be found in the accompanying tables.

Standards for the training and registration of professional personnel have been worked out to the highest degree in the United States. The American Medical Association supplies a continuous revision of minimum essentials with respect to acceptable medical schools, internships, residencies and fellowships and approved examining boards. The American Dental Association sets corresponding standards for the dental profession. The American Council on Pharmaceutical Education has accredited certain colleges of pharmacy, and the National League of Nursing Education sets standards for nursing. The Committee on Professional Education of the American Public Health Association puts out a periodic revision of qualifications for public health personnel.

**Physician Requirements**

| | Population |
|---|---|
| 1 General practitioner | to 1,500 |
| 1 Surgeon | to 10,000 |
| 1 Eye, ear, nose and throat | to 15,000 |
| 1 Internist | to 30,000 |
| 1 Gynecologist and obstetrician | to 20,000 |
| 1 Pediatrician | to 30,000 |
| 1 Roentgenologist | to 60,000 |
| 1 Pathologist | to 100,000 |
| 1 Urologist | to 65,000 |
| 1 Orthopedist | to 100,000 |
| 1 Dermatologist | to 100,000 |
| 1 Psychiatrist | to 100,000 |

**Dental Requirements**

| | Number 100,000 Population |
|---|---|
| Dentists | 99 |
| X-Ray technicians | 27 |
| Hygienists | 45 |
| Laboratory technicians | 18 |

*The Pattern of Tomorrow.*—In the future, group practice by general practitioners will increase through the health centers, and physicians will be responsible for prescribing measures for the community against whatever forces interfere with "the full development and maintenance of man's mental and physical capacity." The medical profession must provide community health care, with the family, rather than the individual, the unit of practice. If physicians are to reorient themselves to their responsibility in providing such care, medical education must be extended to include social as well as clinical pathologic diagnosis.

In the United States, medical schools are now organizing to promote comprehensive health care on a prepayment basis for persons in the community and are making group clinics available for teaching purposes. In Britain, several medical centers are experimenting with the control of medical care facilities in their areas.

**A Report on the Results of Antivivisection.** By The National Society for Medical Research, 28 E. Washington St., Chicago 2.

A survey conducted by the National Society for Medical Research among 48 medical schools, 8 dental schools, 3 veterinary schools, 2 hospitals and 1 government health agency revealed that these institutions consider their work in protecting and improving public health hampered in both research and teaching by antivivisectional obstructions.

This occurs in two ways: (1) through restrictions on the kinds of animals usable; this limits the number obtainable; (2) through the hindering increase in costs which results from this false shortage of animals. Thus, less desirable animals are used, medical students are limited in their training and research workers in cancer, poliomyelitis, heart disease and tuberculosis are slowed in their battle against these afflictions.

As an ironic result of antivivisection propaganda and action, not only is new medical knowledge to help men, women and children retarded, but studies conducted for the benefit of pets and livestock are halted or hindered.

*(To Be Continued)*

## Medical Examinations and Licensure

### COMING EXAMINATIONS AND MEETINGS

#### NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various Centers. Sept. 12-14. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

#### EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc. *Oral.* Denver, Oct. 16-20. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

American Board of Dermatology and Syphilology, Inc.: *Written,* Various Centers, Sept. 15. *Oral.* Cincinnati, Sept. 15. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Oct. 17. Asst. Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Part I.* Various Centers. Feb. 3. Final date for filing application is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: St. Louis, Oct. 15-19; Boston, December. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Final date for filing application for Part II is Aug. 15. Address: Sec.-Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

American Board of Pathology: Chicago, Oct. 7-8. Final date for filing application is Sept. 1. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: *Oral.* Cleveland, Sept. 16-18; New York City, Oct. 21-23; Chicago, Dec. 9-11. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Preventive Medicine and Public Health: *Parts I and II.* New York, Oct. 22-24. Final date for filing application is July 22. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Psychiatry and Neurology, Inc. *Special Examination,* Chicago, Oct. 24-25. December, New York City. Final date for filing applications is Sept. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Cincinnati, Sept. 28-Oct. 2. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, October 26. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written,* December. *Oral and Clinical.* Chicago, Feb. 11-15. Final date for receipt of case histories is Sept. 1, 1949. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18.

#### BOARDS OF MEDICAL EXAMINERS

Alaska: * Juneau, Sept. 6. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Arkansas: * *Examination.* Little Rock, Nov. 3-4. Sec., Dr. Joe Verser, Harrisburg.

District of Columbia: * *Examination.* Washington, Nov. 14-15. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Georgia: *Examination.* Atlanta, Oct. 11-12. *Reciprocity.* Atlanta, Oct. 13. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Illinois: Chicago, Oct. 4-6. Supt. of Registration, Mr. Fred W. Ruegg, Capitol Bldg., Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Sept. 5, Oct. 3, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Minnesota: * Oct. 18-19. Sec., Dr. Julian F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Montana: Helena, Oct. 3-5. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, Sept. 8-9. Sec., Dr. J. S. Wheeler, 107 State House, Concord.

New Jersey: Oct. 18-21. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico: * Santa Fe, Oct. 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

Ohio: *Examination.* Columbus, December. *Endorsement.* Aug. 2 and Oct. 2. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Pennsylvania: *Examination.* Philadelphia and Pittsburgh, July. Acting Sec., Mrs. B. G. Steiner, 351 Education Bldg., Harrisburg.

Puerto Rico: San Juan, Sept. 6-10. Sec., Dr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

Tennessee: *Examination.* Memphis, Sept. 28-29. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis 3.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Wisconsin: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

Wyoming: Cheyenne, Oct. 3. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

#### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: Juneau, Aug. 28. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, Sept. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Arkansas: *Examination.* Little Rock, Oct. 4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

Colorado: *Examination.* Denver, Sept. 14-15. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

District of Columbia: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Michigan: *Examination.* Detroit and Ann Arbor, Oct. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing 15.

Minnesota: *Examination.* Minneapolis, Oct. 4-5. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

Nebraska: *Examination.* Omaha, Oct. 4-5. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln 9.

New Mexico: *Examination.* Santa Fe, Aug. 7. Sec., Miss Marguerite Kilkenny, 110 W. Houghton St., Santa Fe.

Oregon: Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

Rhode Island: *Examination.* Providence, Aug. 10. Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Wisconsin: Milwaukee, Sept. 24 and Dec 3. Sec., Prof. W. H. Barber, Ripon College, Ripon.

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Diseases of Children, Chicago

**76**:485-608 (Nov.) 1948

BCG Inoculation and BCG Vaccination. A. Wallgren.—p. 485.
*Complications of Vaccination Against Smallpox. M. Greenberg.—p. 492.
*Electroencephalography of the Newborn: Studies on Normal, Full Term, Sleeping Infants. J. G. Hughes, Babette Ehemann and U. A. Brown. —p. 503.
Hemangioma (Capillary and Cavernous) with Thrombopenic Purpura: Report of Case with Observations at Autopsy. H. K. Silver, P. M. Aggeler and J. T. Crane.—p. 513.
Pediatric Teaching Facilities: Actualities and Hope. J. L. Wilson —p. 521.
Desirable Correlations Between Pediatrics and Preclinical Departments. A. A. Weech.—p. 528.
Desirable Correlations Between Pediatrics and Other Clinical Departments. R. McIntosh.—p. 533.
Makeup of Complete Pediatric Department. I. McQuarrie.—p. 541.
Undergraduate and Postgraduate Pediatric Education in Medical Schools. W. C. Davison.—p. 545.

**Complications of Vaccination Against Smallpox.**—According to Greenberg, approximately 5,000,000 persons were vaccinated in New York City during April and May 1947. A random sampling of 25,295 vaccinated persons indicated that 74 per cent had successful takes and were therefore susceptible to smallpox. There were observed 45 patients with postvaccinal encephalitis, a ratio of 1 to 110,000 vaccinations. There were 4 deaths. Of the patients who recovered, only 2 had residual pathologic signs; one, hemiparesis, and the other, optic neuritis. Forty-five patients had generalized vaccinia; 28 had a preexisting dermatosis, usually eczema. Of the 45 patients, 28 had not been vaccinated; all but 1 had been in intimate contact with someone recently vaccinated, and all but 1 were children under 5 years of age. Two infants died; neither had been vaccinated, but both had been in contact with a vaccinated person. Only 1 death occurred as a result of infection of a vaccination area. There occurred 9 per cent of false positive serologic reactions for syphilis in a group of 133 known nonsyphilitic subjects. A preliminary study of infants born to women who were vaccinated in the first four months of pregnancy indicated no increase in the ratio of congenital defects as compared with that for a control group.

**Electroencephalography of the Newborn.**—Hughes and his associates made 167 electroencephalographic tracings on 113 full term, apparently normal infants, ranging in age from 20 minutes to 6 days. A total of 72 infants on whom 82 electroencephalographic tracings were obtained constitutes the basis of this report. Thirty mothers were given caudal analgesia without indication of sensitivity reactions, a drop in blood pressure or any abnormal manifestation. Forty-two mothers were delivered spontaneously without administration of drugs, except for 8 who received a few breaths of ethylene and oxygen during the second stage of the delivery. The tracings obtained on the infants born of these 8 mothers did not differ from those of the infants whose mothers received no agent. The tracings obtained from babies born spontaneously without maternal sedation were practically identical with those obtained from infants born of mothers given caudal analgesia. The authors describe some of the differences observed. In all the electroencephalographic tracings obtained for both groups of infants the amplitude was low in comparison to the amplitude of tracings obtained beyond the neonatal period. The observations give objective evidence from the electrical standpoint of the functional cortical immaturity known to exist in the newborn.

### American Journal of Medical Sciences, Philadelphia

**217**:121-240 (Feb.) 1949

Epidemic Wave of Thyrotoxicosis in Denmark During World War II. K. Iversen.—p. 121.
Experimental Study of Life Situations, Emotions, and Occurrence of Acidosis in Juvenile Diabetic. L. E. Hinkle Jr. and S. Wolf.—p. 130.
*Long Term Anticoagulant Therapy for Cardiovascular Diseases. W. T. Foley and I. S. Wright.—p. 136.
*Effects of Myanesin upon Central Nervous System. G. D. Gammon and J. A. Churchill.—p. 143.
*Treatment of Pneumococcic Meningitis with Massive Doses of Systemic Penicillin. H. F. Dowling, L. K. Sweet, J. A. Robinson and others. —p. 149.
Penicillin Syphilotherapy Administered During Pregnancy: Study of 149 Pregnancies During Which Penicillin Was Given for Early Maternal Syphilis. H. A. Tucker.—p. 157.
Nitrogen Mustard Therapy: Use of Methyl Bis(B Chloroethyl)Amine Hydrochloride in Hodgkin's Disease, Leukemia, Lymphosarcoma and Cancer of Lung. S. Ben-Asher.—p. 162.
Death During Skin Testing. W. B. Blanton and A. K. Sutphin.—p. 169.
Studies in Relation of Hemolytic Streptococcus to Rheumatic Fever Infection, and others. V. Streptococcal Anti-Hyaluronidase (Mucin-Clot-Prevention) Titers in Sera of Patients with Rheumatic Fever, Streptococcal. T. N. Harris and Susanna Harris.—p. 174.
Allergic Cardiovascular Disease, with Report of Two Cases of Periarteritis Nodosa. M. R. Hejtmancik, N. D. Schofield and G. R. Herrmann.—p. 187.
Incidence of Blood Groups and Secretor Factor in Patients with Pernicious Anemia and Stomach Carcinoma. R. P. Ladenson, S. O. Schwartz and A. C. Ivy.—p. 194.
Role of Platelets in Coagulation of Blood. A. J. Quick, J. N. Shanberge and M. Stefanini.—p. 198.
Electrophoretic Analysis of Plasma Proteins in the Aged. H. A. Rafsky, B. Newman and C. I. Krieger.—p. 206.
Erythrocyte Sedimentation Rate in Brucellosis. Suzanne Agnew and W. W. Spink.—p. 211.
Carcinoma of Female Breast. W. T. Fitts Jr.—p. 215.
Effect of Rutin in Control of Bleeding into Retina. R. W. Hollenhorst and H. P. Wagener.—p. 223.

**Anticoagulant Therapy for Cardiovascular Diseases.**—Foley and Wright maintained 7 men and 12 women between the ages of 25 and 66 years, with various thromboembolic conditions, for periods of five to twenty months (average eleven months) on dicumarol.® Their prothrombin time has been checked every seven to fourteen days after being carefully standardized at more frequent intervals during several weeks or months of hospitalization. The aim was to determine a daily dose of dicumarol® which would maintain the prothrombin time at 30 to 35 seconds, for which the term "therapeutic level" has been coined. The average weekly dose of dicumarol® required to maintain this level varied from 175 mg. to 800 mg. No thromboembolic episode occurred while the prothrombin time was at the therapeutic level. There have been no deaths in this series despite the seriousness of the condition of many of the patients at the time therapy was instituted. This method requires constant vigilance on the part of the physician and faithful cooperation from the patient. It necessitates a laboratory skilled in determining prothrombin time. Neither age nor weight constitutes the determining factor in the dosage requirements. An adequate protein intake helps to stabilize the requirements in some patients. Excessive alcoholic intake may affect the requirement. Prothrombin times of more than 300 seconds have occurred without serious hemorrhage. Sixty seconds is regarded as the upper limit of the desirable and safe therapeutic range. Excessive prothrombin times have all been controlled with vitamin K in adequate doses and whole fresh blood transfusions. This method of therapy has enabled most of these patients to lead fairly normal social lives and to support themselves and their families.

**Effects of Myanesin® on Central Nervous System.**—Gammon and Churchill administered myanesin® (3-ortho-toloxy-1,2-propanediol) by intravenous route to 35 patients with various pathologic states. Injection of a 1 or 2 per cent solution rapidly up to 1 Gm. established the action. The effect lasts for a few minutes to one hour. To maintain action after the initial dose it is necessary to infuse about 1 mg. per kilogram of body weight per minute. Parkinsonian tremor was abolished in 7 cases without impairment of strength or consciousness, an action which is unique. The tone of these patients was reduced. Choreoathetosis was reduced or abolished in 4 cases, confirming other observations. Senile tremor was improved but the tremor of multiple sclerosis was increased in 2 cases. One case of Huntington's and 1 of congenital chorea were unaffected. Brief discharges associated with anterior horn cell disease were not affected as in fasciculations of amyotrophic lateral sclerosis and organic facial hemispasms. The spasm of tetanus was abolished. A sensory effect was noted in the abolition of tabetic pain and an exaggerated second pain response, and in causalgic pain. Phantom limb pain was unaltered. These observations suggested a differential depression of function in the basal ganglions, brain stem and thalamus. The conclusion was strengthened by the abolition of petit mal discharges in 6 cases by a dose which did not affect the normal encephalogram or the discharge from a cortical scar. Improvement in certain psychoses was suggested by preliminary observations of the effect of the agent in 1 patient with reactive depression, in 1 deteriorated negativistic schizophrenic patient and in 1 agitated patient who would not respond to other medication. The transitory action of the drug limits its therapeutic possibilities.

**Penicillin in Pneumococcic Meningitis.**—Dowling and his co-workers treated 21 patients, 5 children between the ages of 3 days and 2 years, and 16 adults between the ages of 33 and 81 years, with pneumococcic meningitis, with 1,000,000 units of penicillin intramuscularly every two hours. Three of them received a single intrathecal injection of penicillin. Thirteen patients received sulfonamide compounds in addition. There were 8 deaths (38 per cent), compared with 41 deaths (62 per cent) among the 66 patients previously treated with smaller doses of penicillin by intramuscular route plus repeated intrathecal injections of penicillin. In patients who recovered the temperature dropped more rapidly among those who received massive systemic doses than among those who were given repeated intrathecal injections. Likewise the duration of pleocytosis was shorter in the former group. Since the results of massive systemic penicillin therapy in pneumococcic meningitis are at least as good as and apparently better than those obtained with the conventional systemic doses of penicillin plus multiple intrathecal doses, it is recommended that all patients with pneumococcic meningitis be given 1,000,000 units of penicillin intramuscularly at two hour intervals. Patients in coma when treatment is instituted may be given a single initial intrathecal dose of penicillin in addition. Sulfonamide compounds do not appear to be necessary when these doses are used.

## American Journal of Ophthalmology, Chicago

**32**:175-344 (Feb.) 1949

*Treatment of Bilateral Retinoblastoma by Irradiation and Surgery: Report of 15-Year Results. A. B. Reese, G. R. Merriam Jr. and H. E. Martin.—p. 175.
Trauma to Head with Particular Reference to Ocular Signs: Part I. Injuries Involving Cranial Nerves. A. B. King and F. B. Walsh. —p. 191.
Unusual Mycotic Infection of Lacrimal Canaliculi and Conjunctiva. H. C. Donahue.—p. 207.
Altitudinal Hemianopia During Streptomycin Therapy. A. E. Schultz. —p. 211.
Role of Shahan Thermophore in Ophthalmic Therapeutics. M. H. Post. —p. 215.
Synkinetic Overaction of Inferior Oblique Muscle. G. P. Guibor.—p. 221.
Significance of Ocular Tension in Hemorrhage of Fundus of Eye. P. Weinstein.—p. 230.
Use of Miotics in Treatment of Convergent Strabismus and Anisometropia: Preliminary Report. S. V. Abraham.—p. 233.
Treatment of Glaucoma with Cyclodiathermy. W. G. Marr.—p. 241.
Copper Within Eye: Report of a Case of Typical Sunflower Cataract of Right Eye and Copper Cataract Involving Posterior Capsule of Left Eye. E. Rosen.—p. 248.
Universal Type Integrated Implant. N. L. Cutler.—p. 253.

**Treatment of Bilateral Retinoblastoma.**—The combined treatment for bilateral retinoblastoma employed by Reese and his associates consists of the surgical removal of the eye with the more advanced lesion and the application of fractional roentgen irradiation to the remaining eye in an attempt to conserve vision. Fifty-five patients have been treated by this method since 1933 and 53 of these are available for statistical analysis. Twenty-five are living with vision of 20/200 or better; 16 are alive but blind and 12 have died of retinoblastoma. Of the 19 patients followed up for five years or more 6 are living with vision of 20/200 or better; 6 are living without recurrence but blind and 7 have died of the disease. The roentgen ray treatments are applied three times a week to alternate temporal and nasal portals in doses of 400 r per portal during each treatment. Treatments are continued for three and one-half months, until a total of 8,000 r has been applied to each field.

## American Journal of Orthopsychiatry, New York

**19**:1-190 (Jan.) 1949. Partial Index

Training of Case Workers in Psychotherapy. N. W. Ackerman.—p. 14.
Evolution of Clinical Psychologist. M. Krugman.—p. 29.
Remarks on Training for Psychotherapy. S. A. Szurek.—p. 36.
Group Work with Psychotic Veterans. Bernice Perlman.—p. 69.
Emotional Implications of Rheumatic Heart Disease in Children. Irene M. Josselyn.—p. 87.
Projective Features of Contemplative Artistic Experience. H. B. Lee. —p. 101.
Organic Impairment Simulating Mental Deficiency. T. Fay and E. A. Doll.—p. 112.
Mental Deficiency from Viewpoint of Obstetrician. D. P. Murphy. —p. 120.

## American Practitioner, Philadelphia

**3**:389-450 (March) 1949

The Time is Now: Ten-Point Program for Federal Aid to Improve Medical Care. G. C. Engel.—p. 389.
Vitamin $B_{12}$. E. Jones.—p. 391.
Modern Treatment of Edema: Report of Relatively Low Toxicity and Effectiveness of Thiomerin, New Mercurial Diuretic that is Well Tolerated Subcutaneously. G. R. Herrmann, J. W. Chriss, M. R. Hejtmancik and P. M. Sims Jr.—p. 393.
Etiology and Pathogenesis of Sprue. J. Preuss.—p. 400.
Psychiatric Conference: Case Report. S. Cobb and H. H. W. Miles. —p. 407.
Clinical Significance of Abnormal Vaginal Bleeding. L. C. Scheffey and W. R. Lang.—p. 412.
Saddle Block and Minimal Spinal Anesthesia. J. M. Maas.—p. 418.
Treatment of Preadolescent Eunuchoidism with Testosterone Linguets. R. F. Escamilla.—p. 425.
Painful Chest Conditions Erroneously Diagnosed as Coronary Thrombosis. J. W. Fischer.—p. 428.

## Annals of Internal Medicine, Lancaster, Pa.

**30**:249-494 (Feb.) 1949

Diagnostic Significance of Urinary Hormonal Assays: Report of Experience with Measurements of 17-Ketosteroids and Follicle Stimulating Hormone in Urine. R. F. Escamilla.—p. 249.
*Hemodynamic Effects of Sympathectomy in Essential Hypertension. R. W. Wilkins, J. W. Culbertson and M. H. Halperin.—p. 291.
*Results of High Dorsolumbar Sympathectomy for Hypertension. J. A. Evans and C. C. Bartels.—p. 307.
Retrograde Arteriography in Diagnosis of Cardiovascular Lesions: I. Visualization of Aneurysms and Peripheral Arteries. N. E. Freeman and E. R. Miller.—p. 330.
Treatment of Acute Putrid Lung Abscess with Penicillin and Sulfadiazine. B. P. Stivelman and J. Kavee.—p. 343.
Clinical Evidence of Sensitivity to Gonadotropins in Allergic Women. E. W. Phillips.—p. 364.
Observations on Relapses in Pernicious Anemia. E. Jones, C. C. Tillman and W. J. Darby.—p. 374.
Use of Nitrogen Mustard in Hodgkin's Disease and Lymphosarcoma. A. H. Meyer and W. C. Overmiller.—p. 381.
Use of Exercise Test in Diagnosis of Coronary Insufficiency. M. Grossman, W. W. Weinstein and L. N. Katz.—p. 387.
*Effect of Carinamide on Blood Concentration of Penicillin Following Oral and Intramuscular Administration of Penicillin. W. W. Zeller, M. H. Lepper, J. A. Robinson and others.—p. 398.

**Effects of Sympathectomy in Hypertension.**—According to Wilkins and his associates little is known concerning the vascular or metabolic effects of sympathectomy in hypertension. Patients with essential hypertension selected for splanchnicectomy have been made available for study by the authors through the cooperation of Dr. Smithwick, under whose direction sympathectomy was performed. They were studied before and again, if possible, within three weeks after bilateral operation, usually of the lumbodorsal type. In addition, some patients were studied a third time four to ten months after operation, whereas a few patients were studied only once—from one to nine years postoperatively. Studies on the hemodynamic effects of sympathectomy revealed (1) little change in basal cardiac output, (2) an early increase and later moderation in hepatic-portal blood flow, (3) a decrease in the splanchnic vasoconstrictor response to the upright position and (4) a decrease or abolition of vasopressor overshoots of arterial pressure after depressor procedures. The postoperative effects are similar whether or not arterial pressure is lowered, except that hepatic-portal blood flow apparently is influenced directly by the level of the arterial pressure. These results, along with the reported studies on renal blood flow, indicate that the direct hemodynamic effects of splanchnicectomy do not account for any lowering of arterial pressure that may occur. It is possible that in some patients indirect physical or chemical mechanisms resulting from these hemodynamic effects may in time act to cause a widespread decrease in peripheral resistance and a lowering of arterial pressure.

**High Dorsolumbar Sympathectomy for Hypertension.**—Evans and Bartels of the Lahey Clinic evaluate the results of operation based on a six month to three year follow-up on 173 patients who underwent a high dorsolumbar sympathectomy from the fourth thoracic to the second or third lumbar ganglion. This study was undertaken to ascertain whether a larger number of patients were being aided than by lower sympathetic resection. Although the present series has been followed a shorter time, and doubtless with the passage of one or two more years the difference in figures will not be so marked, the superiority of results in patients with group III fundi (hemorrhage and exudate) has doubled, from 21 to 44 per cent. Poor results have dropped one third, from 37 to 13 per cent. Good results in patients with groups I and II fundi have almost doubled, from 39 to 74 per cent, and poor results are less than one half, having dropped from 23 to 9 per cent. The principal effect of splanchnicectomy on hypertension is orthostatic; symptomatic relief is parallel to drop in orthostatic rather than supine blood pressure. High dorsolumbar sympathectomy did not protect 8 patients among the 173 from subsequent cerebrovascular accident, fatal in 2 cases. Angina was wholly or partially relieved in 9 of 15 patients. Ninety per cent of patients with abnormally wide transverse diameters of the heart showed reduction of heart size, 64 per cent to normal. There was improvement in 21 of 50 patients who had abnormal electrocardiograms. Thirty-four of 45 patients with nocturia reported complete or partial relief. At least one renal function test showed improvement in 33 of 55 patients who had one or more tests indicating impairment before operation. Retinal vascular change improved in two thirds of 117 patients. Operative mortality was 0.5 per cent; mortality rate within the follow-up period of six to thirty-three months was 7 per cent. The authors do not consider this type of operation with its prolonged convalescence as a prophylactic operation for benign hypertension but urge it on patients under 50 years of age with spastic, exudative and hemorrhagic retinal arteriolar changes, moderate cardiac damage, signs of early nephrosclerosis and labile blood pressure.

**Carinamide and Blood Concentration of Penicillin.**—Zeller and his associates administered carinamide orally to 106 patients in an effort to determine its ability to increase the concentrations of penicillin in the serum. The average increase in serum penicillin concentrations attained with the use of penicillin plus carinamide over that obtained with the use of penicillin alone was approximately fourfold, regardless of the route of administration of penicillin. The acute toxicity of carinamide is negligible. The chronic toxicity is as yet undetermined. A recommended dose of carinamide is 4 Gm. every four hours. Carinamide is used to best advantage clinically in combination with penicillin administered orally.

## Archives of Neurology and Psychiatry, Chicago

60:331-428 (Oct.) 1948

Psychomotor Epilepsy. Erna L. Gibbs, F. A. Gibbs and B. Fuster.—p. 331.
Human Electromyogram in Response to Nerve Stimulation and Conduction Velocity of Motor Axons: Studies on Normal and on Injured Peripheral Nerves. R. Hodes, M. G. Larrabee and W. German.—p. 340.
*Changes in Brain Associated with Electronarcosis: Report of Case. B. J. Alpers and L. Madow.—p. 366.
*Electroencephalogram of Multiple Sclerosis: Review of Literature and Analysis of 34 Cases. M. Ziefert.—p. 376.
Gangrene of Face Following Occlusion of Posterior Inferior Cerebellar Artery. N. Savitsky and S. P. Elpern.—p. 388.
Untoward Reactions to Curare Consequent to Vagal Hyperactivity Following Electroshock Convulsions. M. D. Altschule and K. J. Tillotson.—p. 392.
Experimental Masochism. J. H. Masserman and Mary Grier Jacques.—p. 402.
Canine Epilepsy Caused by Flour Bleached with Nitrogen Trichloride ("Agene"): III. Electroencephalographic Analysis. M. L. Silver, E. P. Monahan, J. R. Klein and G. H. Pollock.—p. 405.

**Changes in Brain After Electronarcosis.**—According to Alpers and Madow the prolonged application of electric current to the brain to produce a narcosis-like state has been used as a psychiatric treatment since 1944. When the current is first applied at the initial dose of 160 milliamperes, there is usually an immediate tonic flexion of the extremities, followed, after ten to fifteen seconds, by extension. There is an initial short cardiac arrest, after which the heart beats slowly and often irregularly. The face and often the neck and chest become flushed. After thirty seconds the high initial current is lowered to from 60 to 70 milliamperes. The tonic contraction relaxes and is replaced by weak clonic twitches. These movements are usually over in ten seconds. With slight adjustment of dose, the state of electronarcosis, in which the patient is quiet but has developed considerable flexor tone in the arms and extensor tone in the legs, is maintained for seven minutes. In schizophrenia this treatment has been found to compare favorably with insulin shock and has been found superior to standard electric shock. Although deaths have resulted in dogs, no serious complications have been recorded as a result of this treatment in human subjects. The authors, however, present the case of a woman, aged 28, who died three hours after her first treatment with electronarcosis. The pathologic changes found in her brain were distinct, recent hemorrhages in the caudate nuclei, the medial nucleus of the thalamus, the posterior hypothalamic nuclei, the supraoptic nucleus, the cerebellum and the choroid plexus of the lateral ventricles. There were fresh, smaller hemorrhages in the cerebral cortex, the corpus callosum, the optic tract and the pineal gland. These changes must be considered related to the treatment, in view of the time relation, the nature of the lesions and the absence of any other probable causative agent.

**Encephalography of Multiple Sclerosis.**—According to Zeifert, at the University of Michigan Hospital diagnosis of multiple sclerosis was made in 485 cases in the five year period ending March 31, 1947. Electroencephalographic studies were made in 44, but 10 of these are excluded because their case histories failed to meet the strict diagnostic requirements that were set up. The electroencephalograms in the remaining 34 cases were analyzed, and in all of them the disease was in exacerbation at the time of the electrical recording. Most of the records were made with the Grass three channel, ink-writing oscillograph. A few were made with the six channel Grass apparatus. Ordinarily, ten electrode placements were made, but in cases in which focal signs appeared or the clinical record pointed to focal activity, additional electrodes were used, the total number varying from seventeen to twenty-six. Fifteen of the 34 patients had profoundly abnormal electroencephalograms, and in 11 of these 15 focal signs were present. Mildly abnormal records were present in 6 of the patients and borderline records in an additional 8 cases. Only 5 of the 34 patients had entirely normal electroencephalograms. Surprisingly little correlation was found between the colloidal gold curve and the electroencephalogram. Although 62 per cent of the patients had abnormal electroencephalograms, only 14.7 per cent had first zone colloidal gold curves. Although this series revealed no electroencephalographic signs specifically diagnostic of multiple sclerosis, the author feels that in obscure cases with no objective evidence of cortical or subcortical involvement the electroencephalogram may be used to differentiate multiple sclerosis from pure spinal cord disease.

## Archives of Ophthalmology, Chicago

40:483-578 (Nov.) 1948

Ophthalmoscopy and Operations for Reduction of High Blood Pressure. A. J. Bedell.—p. 483.
Electronic Flash (Gas Discharge) Tube in Photography of Anterior Segment of Eye. R. R. Trotter and W. M. Grant.—p. 493.
Esthetic Correction of Unilateral Anophthalmos by Ophthalmoprosthesis, P. J. Murphey, F. H. Newton, C. Stell and Peggy Parker.—p. 497.
Nonperforating Thermometric Cyclodiathermy in Treatment of Hypertensive Uveitis. L. Weekers and R. Weekers.—p. 509.
*Lymphosarcoma of Eyelid. Report of Case, with Death in Forty Days. F. C. Stansbury.—p. 518.
Infection of Cornea Due to Herpes Simplex: Experimental Study. J. L. McGraw.—p. 531.
Invasion of Optic Nerve by Retinoblastoma. A. B. Reese.—p. 553.
Clinical Course of Ocular Complications of Arachnodactyly. R. I. Lloyd.—p. 558.
Lipemia Retinalis Associated with Essential Hyperlipemia. E. E. Grossmann and J. B. Hitz.—p. 570.

**Lymphosarcoma of Eyelid with Rapid Fatal Termination.**—Stansbury reports the case of a man, aged 49, who on May 9, 1947 consulted his physician with the complaint that a hot chip of metal had flown into his right eye two days previously. The piece of steel had been removed immediately, but the following day the eye was red, with a purulent discharge. His physician made a diagnosis of acute purulent conjunctivitis and prescribed sulfathiazole ophthalmic ointment. On May 14 there developed an inflammation of the right lower lid which subsided with treatment. Two weeks later the lids of the right eye began to swell. On June 2 hospitalization for the administration of penicillin was advised. After two days of this regimen sulfadiazine was combined with the penicillin, and on June 9 they were both discontinued and treatment with streptomycin was instituted. Two days later penicillin was given again, this time in combination with streptomycin. An ophthalmologist made a diagnosis of orbital cellulitis and abscess of the lid. Incision into the apparent abscess yielded no discharge. On June 18 the antibiotics were discontinued. On June 24 the patient presented a hard, red swelling of the right eyelid and the right side of the face. The impression was that of a fungous infection of the right orbit and the right side of the face, but cultures revealed only a few nonpathogenic bacteria. A few small nodes became palpable in the right axilla. On June 30 a biopsy was performed on the mass over the angle of the jaw; microscopic examination of the sections disclosed a highly malignant lymphosarcoma of the reticulum cell type. The patient died on July 8. The case was unusual in that the lesion was considered an atypical, low grade inflammatory process, and the disease progressed rapidly to a fatal termination. Pathologically, the neoplasm is unique because of meager amount of involvement of the lymph nodes and the rapid, destructive spread to involve all the viscera and other tissues of the body.

## Archives of Physical Medicine, Chicago

### **30**:71-126 (Feb.) 1949

Some Metabolic Observations During and After Exercise in Patients Convalescing from Acute Illness. R. C. Darling.—p. 71.
Physical Medicine in Disabilities of the Aged. H. Dinken.—p. 78.
Physical Medicine in Rehabilitation Hospital. R. W. Boyle.—p. 82.
Effects of Therapeutic Exercise on Peripheral Circulation of Normal and Paraplegic Individuals. K. G. Wakim, E. C. Elkins, R. E. Worden and H. F. Polley.—p. 86.
Reliable Evidence for Acceptance of Devices for Physical Medicine. H. A. Carter.—p. 96.
*Use of Cold Room in Treatment of Hyperpyrexia and Burns. H. R. Brown Jr. and V. De Lalla Jr.—p. 98.
Therapeutic Devices Under the Federal Food, Drug and Cosmetic Act. I. Kerlan.—p. 102.

**Cold Room in Treatment of Burns.**—Brown and De Lalla report a man with 50 per cent of his surface area burned. To maintain pressure over the burns, it was necessary to apply bandages over approximately 85 per cent of his surface area, the effectiveness of which was seriously diminished in its ability to lose heat. The extreme elevation of the body temperature (105 F.) of the patient was easily and quickly lowered to a normal range and then maintained at levels below 101 F. by placing the patient in a cold room adjacent to the hospital ward for three and one half days. A 1½ horse power compressor situated in an adjacent room was used as the cooling unit; temperatures as low as 40 F. and as high as 110 F. may be achieved, and any desired humidity obtained. Thereafter the patient's problem was one of long and difficult fluid balance and plastic surgery; he was eventually discharged with completely healed skin. A cool environment (65 to 70 F.) is of importance in the therapy of burns and burn shock, whether hyperpyrexia is present or not. If extremely high body temperatures are a factor, as in the authors' case, a cool environment becomes a critical necessity, the exact room temperature depending on the individual requirements. Two other cases of severe resistant hyperpyrexia, one that of a man aged 30 with pneumococcic meningitis and the second that of a girl aged 6 with bulbar poliomyelitis, showed that human body temperatures can be easily and quickly reduced from 106 F. to 98 F. and maintained near the normal level by the use of a cold room. The value of a chamber permitting control of the environmental temperature in tropical and subtropical zones is obvious. The usefulness of such a room to both military and civilian hospital facilities is emphasized.

## Blood, New York

### **4**:97-200 (Feb.) 1949

Hemophilia: Clinical Study of 40 Patients. C. S. Davidson, R. D. Epstein, G. F. Miller and F. H. L. Taylor.—p. 97.
Studies on Undetermined Circulating Anticoagulant: Case Report and Laboratory Findings. D. G. Dieter, M. Spooner and F. J. Pohle.—p. 120.
Familial Panmyelophthisis: Fanconi Syndrome in Adults. K. Rohr.—p. 130.
Extramedullary Blood Production. C. M. Plum.—p. 142.
Bone Marrow Nutrition in Relation to Phagocytic Activity of Blood Granulocytes. C. A. Mills.—p. 150.
*Some Observations on Effect of Folic Acid Antagonists on Acute Leukemia and Other Forms of Incurable Cancer. S. Farber.—p. 160.
*Use of Folic Acid Antagonists in Treatment of Acute and Subacute Leukemia: Preliminary Statement. W. Dameshek.—p. 168.
Distribution Curve of Erythocyte Fragility. Different Method of Presentation of Fragility of Erythrocytes to Hypotonic Saline, with Preliminary Remarks on Function of Reticulocytes. J. H. Bolton.—p. 172.
Laboratory Diagnosis of Sickle Cell Anemia with Special Reference to Diagnostic Parameter. H. M. Perr.—p. 179.
Concomitant Infectious Mononucleosis and Hemolytic Icterus. D. H. Appelman and M. M. Morrison.—p. 186.
Infectious Lymphadenosis (Mononucleosis) and Hemolytic Anemia in Negro; Recovery Following Splenectomy. S. J. Wilson, C. E. Ward and L. W. Gray.—p. 189.

**Effects of Folic Acid Antagonists on Leukemia.**—Farber reviews the present status of the use of folic acid antagonists in acute leukemia in children. Temporary remissions in acute leukemia, as marked as those caused by aminopterin,® have been produced by the use of two compounds closely related chemically to aminopterin® (4-aminopteroylglutamic acid)—a-methopterin® (4-amino-10-N-methylpteroylglutamic acid) and amino-an-fol® (4-aminopteroylaspartic acid), both of which are also toxic compounds. Despite the increasing number of patients in whom temporary remissions have been produced, with survival in some far beyond the usual course of the disease, no evidence has been presented which would justify the use of the word "cure" of acute leukemia. Further research for less toxic related compounds with even greater effectiveness is imperative. Two of the most pressing problems demanding solution are concerned with the nature, the prevention and the treatment of toxic changes, including hemorrhage, produced by these folic acid antagonists and the causes, prevention and mechanism of hemorrhage in acute leukemia. The use of the folic acid antagonists in the treatment of incurable cancer including leukemia must remain in the realm of research until answers are found to these questions.

**Use of Folic Acid Antagonists in Leukemia.**—Dameshek says that whereas Farber's observations were made chiefly on children, his were made chiefly on adults, only 4 of his 35 patients being children. The folic acid antagonists were dissolved in sterile isotonic sodium chloride solution, were injected intramuscularly daily until a toxic or pronounced hematologic reaction occurred, following which the drug was discontinued. The drug was then resumed in a maintenance dose when the toxic reaction had subsided. Aminopterin® was given in a dosage of 1 to 4 mg. daily, a-methopterin,® 2 to 5 mg. daily; amino-an-fol® 25 to 75 mg. daily, and a-ninopterin® (4-amino-9-methylpteroylglutamic acid) 5 to 15 mg. daily. Maintenance therapy was given either daily or every other day and either by intramuscular or oral route. Of the 35 patients, 1 has been under treatment for less than four weeks, and 8 died within one to five days after therapy was instituted. Of the remaining 26 patients, 9 have had continued or intermittent remissions for at least two months and up to eight and one-half months. Thus the folic acid antagonists seem to have the capacity to induce remissions in about one third of the cases of acute and subacute leukemia. Remissions are obtained most commonly in the lymphoblastic types, least often in the monocytic types. It is possible that folic acid is required by the primitive white cell as a growth factor. The folic acid antagonists may result in cell death by modifying various enzyme systems within the primitive cells. The proliferative process is by no means cured with aminopterin® treatment. Acute leukemia may be likened to "wildfire" which, although damped by aminopterin,® continues to smolder. There comes a point in the leukemic process at which both the leukemia and increasing toxicity to the drug make further progress impossible, and the patient dies. Other growth factors or enzymes are probably of importance in the metabolism of the primitive white cells, and when these are discovered and their antagonists synthesized, the therapeutic results in acute leukemia may be of more consistent and durable nature.

## Cancer Research, Baltimore

### **9**:65-128 (Feb.) 1949. Partial Index

*Some Effects of Long-Continued Estrogen Treatment on Male Dutch Rabbits. H. A. Bern.—p. 65.
Histologic Appearance of Mouse Sarcoma 180 Infected by Vaccinia Virus. R. A. Kitzler, Barbara Mulliken and J. C. Turner.—p. 74.
Primary Liver-Cell Carcinoma (Hepatoma) in Dog. R. M. Mulligan.—p. 76.
Effects of Casein and Methionine on Retention of Hepatic Riboflavin and on Development of Liver Tumors in Rats Fed Certain Azo Dyes. A. C. Griffin, C. C. Clayton and C. A. Baumann.—p. 82.
*Effect of Diethylstilbestrol on Incidence of Leukemia in Male Mice of Rockefeller Institute Leukemia Strain (R. I. L.). J. B. Murphy and E. Sturm.—p. 88.
Citric Acid Content of Tumor Tissue and Tumor-Bearing Rats. F. L. Haven, C. Randall and W. R. Bloor.—p. 90.
Induction of Mammary Cancer with Methylcholanthrene: II. Histologic Similarity Between Carcinogen-Induced Tumors and Certain Mammary Neoplasms Occurring Spontaneously. A. Kirschbaum.—p. 93.
Effects of Hepatic and Splenic Extracts from Human Lymphomata upon Lymphatic System of Experimental Animals. J. B. Storer and C. C. Lushbaugh.—p. 108.

**Long-Continued Estrogen Treatment in Rabbits.**—Bern subjected a series of male Dutch rabbits, intact and castrate, to continuous treatment with estradiol and estradiol dipropionate for 159 to 633 days. The seminal vesicles were tremendously enlarged, and the epithelium of the prostate, vesicular gland and seminal vesicle underwent metaplasia to a nonsquamous, transitionoid type, adenomatous in appearance. No abdominal fibroids or prostatic fibromyoepitheliomas, as reported in the guinea pig, were found, but tumorous changes (fibromas and invasive epithelial proliferations) hitherto undescribed in male mammals after estrogenization were noted in the vasa deferentia and in the epididymides of certain rabbits.

**Effect of Diethylstilbestrol on Leukemia in Mice.**—According to Murphy and Sturm the Rockefeller Institute leukemia strain of mice shows a consistently higher incidence of the disease in females than in males. The rate in normal males during the period of the present study was 41.5 per cent and the females 70. Prolonged treatment of male mice with diethylstilbestrol increased the rate to 71 per cent, a close approximation to that shown by the control females. It is suggested that this result is due to the interference with the male sex hormone rather than to a direct action of the estrogen.

## Hawaii Medical Journal, Honolulu

### **8**:177-236 (Jan.-Feb.) 1949

Five Years of Heart Disease in Hawaii. M. E. Berk and A. S. Hartwell.—p. 177.
Psychodynamic Electrotherapy: New Psychiatric Modality. J. R. Jacobson.—p. 181.
Fatal Renal Failure Following Transfusion of Compatible Blood and Excessive Intravenous Administration of Fluids. M. Gerundo.—p. 184.
Brain Tumors in Hawaii, 1938-1948: Statistical Review of 85 Verified Cases. R. B. Cloward.—p. 188.
Eclampsia and Weather in Hawaii: Preliminary Study. H. E. Bowles.—p. 194.

## Industrial Medicine, Chicago

### **18**:47-90 (Feb.) 1949. Partial Index

Surgical Treatment of Skull and Brain Injuries. R. Jaeger.—p. 47.
Early Appearance and Rapid Development of Large Ventricular Aneurysm. L. Price.—p. 52.
Industrial Medical Education. W. F. Ashe.—p. 55.
Treatment of Burns—with Particular Reference to Local Care. M. L. Mason.—p. 59.
Ultra-Violet Exposure from Germicidal Lamps. G. M. Hama.—p. 75.
*Lead Poisoning Caused by Bullet Embedded for Twenty-Seven Years. W. D. McNally.—p. 77.
Operative Treatment of Acute Subdeltoid Bursitis with Calcification. P. O. Pelland and W. Hoffman.—p. 79.

**Lead Poisoning from Embedded Bullet.**—McNally presents the case of a woman, aged 66, who on admission to hospital complained of epigastric pain and vomiting for the past nine days. She also complained of pain in the right knee from old arthritis. The hematologic report gave a suspicion of lead poisoning and led to further questioning of the patient. She stated that twenty-seven years prior to this examination she was accidentally shot in the right knee. Mental confusion, nervous excitability and dulness developed. The patient complained of headaches, exhaustion and pain in the abdomen, and gradually was unable to speak. She died on her forty-seventh day in the hospital. Necropsy revealed the presence of lead in the kidney, the sternum and ribs in amounts usually found in people who work in lead industry. The amount of lead found in the liver and heart was three times that found in persons dying with symptoms of lead intoxication and with a history of an exposure to lead. Similar instances of lead intoxication are cited from the literature, in which absorption of lead, and the onset of symptoms, were very slow. Thus it appears that bullets and shrapnel remaining in the body may become a source of plumbism, derange renal function and possibly retard wound healing.

## Journal of Bacteriology, Baltimore

### **57**:1-136 (Jan.) 1949. Partial Index

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Paper Chromatographic Method for Quantitative Estimation of Penicillin Entities. R. G. Kluener.—p. 101.
Serum Concentration of Penicillin G in Mice, Rabbits, and Men after Its Intramuscular Injection in Aqueous Solution. H. Eagle, R. Fleischman and A. D. Musselman.—p. 119.

## Journal of Immunology, Baltimore

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Effect of Acriflavine and Phosphine GRN on Lysis of Bacteria by Bacteriophage. A. G. Smith.—p. 57.
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## Journal of Infectious Diseases, Chicago

### **84**:1-110 (Jan.-Feb.) 1949. Partial Index

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## Journal National Malaria Society, Columbia, S. C.

**7**:241-336 (Dec.) 1948. **Partial Index**

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Id.: XXI. Cure of St. Elizabeth Strain Vivax Malaria by Pentaquine-Quinine, Administered During Acute Attacks or During Latency. W. C. White, W. C. Cooper, G. R. Coatney and others.—p. 316.
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## J. Neuropathology & Exper. Neurology, Baltimore

**8**:1-124 (Jan.) 1949

*Acute Necrotizing Hemorrhagic Encephalopathy. R. D. Adams, J. Cammermeyer and D. Denny-Brown.—p. 1.
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Carcinoma of Breast and Intraspinal Meningioma: Report of Three Cases. D. A. Freedman, E. H. Feiring and L. M. Davidoff.—p. 85.
Paresthesia in Rhesus Monkey Associated with Thalamic Lesion, and Its Alleviation by Postcentral Cortical Excision. J. R. Whittier, S. E. Graham and N. Kopeloff.—p. 93.
Efferent Intercortical Connections of Superficial Cortex of Temporal Lobe (Macaca Mulatta). R. Petr, L. B. Holden and J. Jirout.—p. 100.

**Acute Necrotizing Hemorrhagic Encephalopathy.**—Adams and his co-workers report 4 cases of acute necrotizing hemorrhagic encephalopathy in 3 men aged 46, 34 and 33, respectively, and in 1 woman aged 56. There were antecedent respiratory or gastrointestinal symptoms associated with fever in each case. After an interval of several days, during which the patient seemed about to recover, an acute exacerbation of the illness with a marked rise in temperature occurred. Severe headache developed and the neck was stiff. The patient became drowsy, confused and comatose. This was followed by hemiplegia, quadriplegia and convulsions. The cerebrospinal fluid was abnormal; neutrophil pleocytosis, elevated protein and normal or slightly reduced sugar were observed. There was a rapid decline and death occurred in one to two days after the onset of the acute illness. Necropsy revealed a large, asymmetric, discolored lesion extending widely through the brain stem or the semioval center. This lesion exhibited swelling and pinkish discoloration with multiple hemorrhages and involved pons, midbrain, subthalamus and cerebellar peduncles in 2 cases, cerebral white matter, internal capsule, cerebral peduncle on one side and the great commissure in the third case, and the white matter of one cerebral hemisphere and brain stem in the fourth case. The microscopic pathologic changes consisted of a widespread necrosis of one large discrete or several smaller confluent areas, partial vascular necrosis with fibrin impregnation of the vessel wall and fibrin exudation, multiple small hemorrhages and heavy neutrophil infiltration of the damaged tissues. No bacteria could be demonstrated by bacterial stains in any of the cases. All 4 cases occurred in the summer and autumn of 1946 at a time when there was no epidemic of virus disease of the nervous system. A distinctive neuropathologic reaction type is suggested similar to that which has been described in some of the reports of hemorrhagic encephalitis or leukoencephalitis. The cause and pathogenesis could not be ascertained. The possibility of an allergic reaction to a toxin or infective agent seems most consistent with the pathologic findings.

## Journal of Nutrition, Philadelphia

**36**:657-832 (Dec.) 1948. **Partial Index**

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Voluntary Caloric Intake of Growing Rat. R. A. Harte, J. J. Travers and P. Sarich.—p. 667.
Nitrogen Balance Index and Specific Dynamic Action in Rats Receiving Amino Acid Mixtures Low in Isoleucine, Methionine or Valine. J. T. Anderson and E. S. Nasset.—p. 703.
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## Journal of Pediatrics, St. Louis

**34**:131-272 (Feb.) 1949

*The Baby's Diaper with Suggestions for Its Improvement. C. G. McKhann and G. Bricmont.—p. 131.
Streptomycin in Treatment of Hemophilus Influenzae Laryngotracheobronchitis. C. O. Terrell Jr. and C. S. Hoar.—p. 139.
Primary Ovarian Agenesis. L. S. Radwin, J. P. Michelson and Jeanne Shore.—p. 143.
Constricting Vascular Rings: Report of 2 Cases with Recurrent Respiratory Infections. M. J. Carson and J. Goodfriend.—p. 155.
Sudden and Unexpected Natural Death: IV. Sudden and Unexpected Natural Death in Infants and Young Children. S. M. Rabson.—p. 166.
Pneumonia in Infancy Caused by Friedländer's Bacillus. B. F. Grotts. —p. 174.
Case of Amyotonia Congenita Associated with Occlusion of Sagittal Sinus and Bilateral Subdural Hygroma: Demonstration of Occlusion by Diodrast Sinography. M. Scott.—p. 181.
Erythema Multiforme Exudativum: Stevens-Johnson Syndrome: Cardiovascular and Central Nervous System Involvement. G. C. Fanney Jr. —p. 195.
Differential Diagnosis of Rheumatic Fever and Infections of Central Nervous System. H. D. Brainerd and M. Sokolow.—p. 204.
Emotional Problems and Education of Hospitalized Children. H. A. Greenberg.—p. 213.
*Fatal Homologous Serum Hepatitis in Young Infant: Case Report with Necropsy Studies. E. C. H. Schmidt and C. H. Lee.—p. 226.

**Improved Diaper.**—McKhann and Bricmont mention disorders traceable to wet or soiled diapers and show that diapering involves hygienic and sanitary problems. Attempts have been made to improve the diaper so that it will be hygienically adequate, sanitarily effective and acceptable as a garment. They describe a diaper designed to collect urine and stool of the infant with minimum contamination of the baby's body and of his bed and clothing. The diaper consists of an envelope constructed to hold a pad. When properly inserted, the pad fits smoothly into the waterproof material covering both ends of the pad, keeping them out of contact with the baby, leaving only a small section in the middle of the pad directly exposed to the excretions. The arc action of the pad holds this section of the pad away from the baby. The insert can be removed by grasping the ends of the diaper garment and applying pressure in the middle with the thumbs. The pad will fall out. Illustrations depict construction, fit and mechanism of the diaper, which in clinical trials has proved 95 per cent effective for the purposes for which it was designed. It reduces the incidence of intertrigo and diaper rash and is not uncomfortable or unsightly. Whether it will materially reduce simple pyuria can be proved only by more extensive trials.

**Fatal Homologous Serum Hepatitis in Infant.**—Schmidt and Lee report the case of an infant who had severe diarrhea and vomiting when 3 weeks old. In the course of four days he was given two transfusions of whole blood of 50 cc. each and three 75 cc. pooled plasma infusions. The child improved rapidly and was discharged from the hospital several days later. A month later the child commenced to cry frequently without apparent cause. Examination at this time disclosed nothing of significance. At the end of the following month, the child had mild diarrhea and fever but improved and was discharged. He was returned on the following day. The terminal stage was sudden in onset with jaundice, multiple hemorrhages, and manifestations referable to the central nervous system. Necropsy was done four hours after death. In addition to the rarity of this disease in infants, two other factors add to the interest of this case. The first is the mild prodromal stage of the illness, a minor gastrointestinal disturbance with recovery, which gave no indication of the destruction of the liver which must have been present when the infant was discharged from the hospital. The second is the sudden onset of jaundice and prostration as the icteric and terminal phases of the illness. In the 3 other reported cases of this disorder, the infants appeared to be doing rather well until shortly before death, which occurred suddenly and unexpectedly. In adults the beginning of the terminal phase is usually abrupt, but the transition most frequently occurs more than one week prior to death.

## Journal of Thoracic Surgery, St. Louis

### 18:1-136 (Feb.) 1949

*Streptomycin as Adjunct in Surgical Treatment of Pulmonary Tuberculosis. D. A. Mulvihill, L. Miscall, R. Klopstock and J. Bitsack. —p. 1.

*Role of Streptomycin in Surgery of Pulmonary Tuberculosis. P. T. Chapman, E. J. O'Brien, P. V. O'Rourke and B. Douglas.—p. 15.

Experimental and Clinical Studies of Role of Streptomycin in Pleural Cavity. E. J. Beattie Jr., B. Blades and C. Horton.—p. 25.

Comparison of Results in Two Hundred Consecutive Resections for Pulmonary Tuberculosis: One Hundred Without Streptomycin Therapy and One Hundred With Streptomycin Therapy. C. P. Bailey, R. P. Glover and T. J. E. O'Neill.—p. 36.

*Evaluation of Streptomycin as Protective Agent in Pulmonary Resection for Tuberculosis. J. A. Moore, J. D. Murphy and P. D. Elrod. —p. 45.

Anatomic Approach to Segmental Resection. J. G. Scannell.—p. 64.

Technic for Pulmonary Segmental Delineation. L. H. Rubenstein, T. J. E. O'Neill and R. P. Glover.—p. 75.

Endobronchial Occlusion During Pulmonary Resection: Preliminary Report. J. D. Moody.—p. 82.

Medullary Pegging in Thoracotomy Incisions. K. P. Klassen.—p. 90.

Obstructive Pneumonitis of Neoplastic Origin: Interpretation of One Form of So-Called Atelectasis and Its Correlation According to Presence or Absence of Sputum. J. R. McDonald, S. W. Harrington and O. T. Clagett.—p. 97.

Cytology of Bronchial Secretions: Its Role in Diagnosis of Cancer. W. L. Watson, H. Cromwell, L. Craver and G. N. Papanicolaou. —p. 113.

Intrathoracic Meningocele. H. J. Mendelsohn and E. B. Kay.—p. 124.

Use of Polythene Film in Posterior Thoracoplasty Wounds. W. D. Seybold, J. H. Grindlay, K. H. Pfuetze and O. T. Clagett.—p. 129.

Bronchiogenic Cyst of Mediastinum. J. Exalto and K. Waldeck. —p. 132.

**Streptomycin as Adjunct in Surgery of Pulmonary Tuberculosis.**—Mulvihill and co-workers used penicillin as an adjunct in the surgical treatment of 65 patients with tuberculosis of the lungs, pleura and chest wall at Triboro Hospital during 1947. Intrapleural procedures were performed in 19 of the 65 patients, comprising ten lobectomies, three total pneumonectomies, three pleural decortications and three intrapleural pneumolyses. In the 13 cases of resection, 0.5 Gm. of streptomycin was given intramuscularly every twelve hours for three to four weeks preoperatively and for ninety days postoperatively. In the remaining 6 cases 1 Gm. of the drug was given for seven days preoperatively and for fourteen days postoperatively. The patients came to operation practically dry as far as sputum output was concerned. The postoperative courses were benign. Neither contralateral nor ipsilateral spreads occurred in the immediate postoperative period, and late spreads or exacerbations have not been noted up to date. In a group of twenty-one lobectomies performed at Triboro Hospital in the prestreptomycin period of 1942 to 1946, 3 patients died eight to nine months postoperatively after development of bronchopleural fistulas, empyema and contralateral spread. The efficacy of preoperative and postoperative treatment with streptomycin in the prevention of postoperative complications was evident likewise in 23 of the 65 patients who were considered as substandard risks for thoracoplasty; there was a definite decrease in sputum output and postoperative courses were benign and uncomplicated. Twenty additional thoracoplasty patients who were not treated with streptomycin are included as controls. Beneficial effects are cited in 16 cases of topical application of the drug in combination with open operations for bronchopleural fistulas and residual tuberculous empyema spaces.

**Streptomycin in Surgery of Pulmonary Tuberculosis.**—Chapman and co-workers present a preliminary report on 800 patients treated with streptomycin at Herman Keifer Hospital and the Maybury Sanatorium. The patients at the Maybury Sanatorium received 1 Gm. of streptomycin once each day for six weeks for pulmonary tuberculosis only, either with or without collapse therapy or other measures, and the patients at Keifer in whom major surgical procedures have been contemplated or have been completed were given 0.5 Gm. of the drug once each day for twelve weeks. In group 1 were patients with early, minimal and moderately advanced disease in whom it was hoped that collapse or other surgical measures could be avoided or reduced in amount; streptomycin has decreased the necessity of collapse measures by over 50 per cent. Group 2 comprised patients in whom surgical procedures could be made possible through streptomycin. The number of patients in whom thoracoplasty was made possible was doubled by the administration of the drug. Group 3 comprised patients who received the drug as a prophylactic measure against spread following surgical and collapse procedures, or to clear these spreads if they occurred and to make the operation possible earlier. In this group many months of hospitalization were saved. Group 4 comprised patients with proved or suspected tracheobronchial disease. Results in proved ulceration were highly satisfactory; healing often occurred soon after the drug was started. Silver nitrate application was no longer necessary. The number of bronchoscopies performed for these lesions has been strikingly reduced. Results of treatment with streptomycin were most striking in soft, mixed and most recent lesions, but occasionally excellent results have been obtained in apparently old, fibrotic lesions. In almost all patients, some clearing of the lesions and clinical improvement have been noted. The authors arrive at the conclusion that streptomycin is not a substitute for but is an adjunct to bed rest and proper collapse measures.

**Streptomycin in Pulmonary Resection.**—Moore and his co-workers did seventy-four resections on 74 patients for pulmonary tuberculosis at the Veterans Administration Hospital at Oteen, N. C., and at the Western North Carolina Sanatorium at Black Mountains, N. C., from January 1947 to May 1948, with the use of streptomycin as a prophylactic agent. Of these thirty-five were lobectomies and thirty-nine pneumonectomies. One of the lobectomy patients died from hemorrhage shortly after operation, a mortality rate of 2.9 per cent. Of the pneumonectomy patients 5 died, an operative mortality of 13 per cent. The mortality rate of the total resections was 8.1 per cent. There have been no late deaths to date. Empyemas developed in 4 patients and were considered to be the result of fistulas. These were assumed to be tuberculous, even though the organism could not be demonstrated in all instances. Bronchial fistulas developed in 4 patients, probably from failure to maintain a tight closure of the bronchus. Spreads followed in 3 patients operated on. There have been no deep tuberculous wound infections and only a few minor wound infections following resection and no late spreads or empyemas to date, but there was progression of the disease in 1 patient sixteen months after operation. As compared with a series of 11 patients on whom resections were done by the authors prior to use of streptomycin, the mortality rate has been reduced from 36 per cent to 8.1 per cent; the rate of spreads from 27 per cent to 4 per cent; the rate of fistulas and empyemas from 55 per cent to 5 per cent, and the rate of sputum conversions has risen from 58 per cent to 87 per cent. Sixty-two of the 68 living patients (92 per cent) have a negative sputum. The authors feel that streptomycin has been the major factor in lowering the mortality and morbidity rate.

## Journal of Urology, Baltimore

### **61:**1-158 (Jan.) 1949. Partial Index

Two Unusual Causes of Renal Hematuria. H. W. McKay, H. H. Baird and K. M. Lynch Jr.—p. 1.
Kidney Suspension by Use of Fascia Lata. J. E. Strode.—p. 11.
Report of Postoperative Survival of Two Cases of Malignancy: (1) Carcinoma of Adrenal Cortex; (2) Wilms's Tumor in an Adult. M. J. Loeb.—p. 20.
Carcinoma of Ureter: Report of Three Cases. W. H. Brooks.—p. 29.
Role of Ureterointestinal Anastomosis in Gynecology and Female Urology. L. R. Wharton.—p. 36.
Vesicoappendical Fistula. H. J. Meisel, H. N. Kagan and J. M. Miller.—p. 43.
*Experiences with Retropubic Prostatectomy. T. D. Moore.—p. 46.
Retropubic Prostatectomy. D. Presman and H. C. Rolnick.—p. 59.
*Retropubic Prostatectomy: Report of 102 Cases. S. K. Bacon.—p. 75.
*Osteitis Pubis: Its Diagnosis and Treatment. L. L. Lavalle and F. C. Hamm.—p. 83.
Urinary Incontinence Following Prostatectomy: Its Cure by Nonoperative Treatment. A. Vergés-Flaqué.—p. 96.
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Case of Double, Triple or Quadruple Penis Associated with Dermoid of Perineum. D. M. Davis.—p. 111.
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Streptomycin Therapy in Urogenital Tuberculosis. L. Herman.—p. 122.
Increased Pathogenicity of Bacillus Lactis Aerogenes in Urinary Tract Infections. S. F. Wilhelm and L. A. Orkin.—p. 131.
Clinical and Hormonal Studies in Familial Pseudohermaphroditism. C. L. Deming, J. B. Goetsch and Frances D. Humm.—p. 144.

**Retropubic Prostatectomy.**—Moore performed retropubic, extravesical prostatectomy, following fairly closely Millin's technic, on 46 patients between the ages of 50 and 86. The results obtained were compared with those in two similar consecutive series of cases, in which patients had been subjected to primary suprapubic prostatectomy or to transurethral prostatic resection. All the patients were of a similar age group and were suffering from essentially the same degree of prostatic obstruction and were patients with much the same infirmities. Their examinations and preliminary preparation were along the same lines, as was also their postoperative care. There is definite evidence that retropubic prostatectomy is an operation perhaps more easily mastered than transurethral resection but somewhat more difficult than removal of the prostate by the suprapubic approach. The advantages of the retropubic approach from the standpoint of the patient appear definite in that the operation is concluded at one sitting, there is less bleeding postoperatively, the period of convalescence is about equal, the risk is no greater, there is less discomfort in the immediate postoperative period, the functional results in the main are superior and the period of hospitalization is shorter than in those dealt with suprapubically and about equal to those treated transurethrally. Osteitis pubis proved to be the most serious deterrent to the retropubic approach, occurring in 8 (17 per cent) of the author's patients from two weeks to five months postoperatively. Treatment consisted of rest in bed, the application of infra-red heat, intensive courses of streptomycin and penicillin and daily injections of thiamine hydrochloride. Should the prevention of this complication prove to be possible, retropubic prostatectomy perhaps will replace to a great extent suprapubic prostatectomy for hypertrophies of unusually large degree.

**Retropubic Prostatectomy.**—Bacon performed a retropubic prostatectomy on 102 patients between the ages of 51 and 96. In 75 patients the initial emergency was complete retention of urine and in 89 the urine was moderately or severely infected. Six specimens were malignant. The largest prostate weighed 190 Gm. and the smallest weighed 6 Gm. Six patients died, 2 on the day of operation, 1 on the second, 1 on the fourth, 1 on the fifth and 1 on the thirty-third postoperative day. Postoperative hospitalization averaged 17.1 days owing to the fact that the majority of the patients were poor surgical risks. In 1 of the patients osteitis pubis developed. As a preliminary consideration, and before actual application of the operation, investigation of the space of Retzius on the cadaver is suggested. In order to avoid misapplication of this technic to prevailing lesions, it is urged that an inventory of results be frequently considered. The retropubic approach has advantage of affording increased comfort during convalescence, prompt urinary control and preservation of sexual potency. The most useful purpose of retropubic prostatectomy is for the complete excision of large or medium hyperplasias.

**Osteitis Pubis.**—Lavalle and Hamm report 7 cases of osteitis pubis in men between the ages of 57 and 72 on whom a suprapubic prostatectomy was done from three to seven weeks before the onset of symptoms. These cases were definitely not infections of the space of Retzius. Early diagnosis was made on the basis of clinical signs alone. It may take one to nine weeks after the onset of symptoms to obtain roentgen confirmation, and treatment should not be postponed until this evidence is obtained. A vitamin B complex preparation was administered intramuscularly twice a day combined with daily short wave diathermy to the affected parts. Improvement occurred within three to six days. This treatment should be instituted as soon as clinical symptoms appear, and weekly roentgenograms of the pelvic girdle should be obtained for confirmation of the diagnosis. When this new therapeutic regimen to hasten recovery fails, recourse to high voltage roentgen therapy should be tried.

## Kentucky Medical Journal, Bowling Green

### **47:**37-75 (Feb.) 1949

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Medical Management of Cardiac Patient Undergoing Surgery. T. G. Hobbs.—p. 62.

## Maine Medical Association Journal, Portland

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### **32:**113-224 (Feb.) 1949

Minnesota's Maternal and Child Health Program. A. B. Rosenfield. —p. 142.
*Prefrontal Lobotomy for Relief of Intractable Pain. J. G. Love, M. C. Petersen and F. P. Moersch.—p. 148.
Emergent Care of Craniocerebral Injuries. W. P. Ritchie.—p. 154.
Toxemias of Pregnancy. W. B. Stromme.—p. 158.
Common Errors in Rh Testing. J. W. Goldsmith and J. L. McKelvey. —p. 164.
New and Satisfactory Operation for Procidentia. A. E. Benjamin. —p. 166.
*Pheochromocytoma of Adrenal with Successful Removal: Report of Case. A. L. Forsgren, W. D. Nesset and D. M. Anderson.—p. 170.

**Prefrontal Lobotomy for Relief of Pain.**—Love and associates of the Mayo Clinic report 9 patients who suffered from intractable and uncontrollable pain in various parts of their body, and who were subjected to bilateral prefrontal lobotomy. In 4 cases the pain was on an organic basis; in the remaining 5 cases no organic cause could be found for the pain. In 6 cases the relief of pain was remarkable and was considered satisfactory. The results in 1 patient with severe diabetes who succumbed to his illness cannot be adequately evaluated. One patient was completely relieved for a time, but he subsequently presented a behavior problem. The other patient was under observation in a mental hospital at this writing; the headache for which the operation had been performed was less troublesome, but he presented a problem in management. The authors are of the opinion that the operation of prefrontal lobotomy is justified and indicated in certain carefully selected patients who have intractable pain, whether of organic or functional type, when less radical measures fail to give relief.

**Successful Removal of Pheochromocytoma of Adrenal.**—Forsgren and associates present the case of a man, aged 27, who had had paroxysmal hypertension for four years. Diagnosis of pheochromocytoma was made with the aid of the histamine test and roentgen visualization of the tumor by perirenal air insufflation. Successful operative removal has apparently resulted in a complete cure.

## New Jersey Medical Society Journal, Trenton

### 46:55-104 (Feb.) 1949

The Physician as a Citizen. J. H. Howard.—p. 57.
Nonunion of Clavicle (Case Report). E. V. Davis.—p. 64.
Evaluation of Antihistaminic Drugs. A. Dintenfass.—p. 66.
Diagnosis and Treatment of Ano-Rectal Disease. J. Gerendasy.—p. 69.
Congenital Malformations in Upper Respiratory Tract. G. R. Brighton. —p. 73.
Negro Tuberculosis Control. R. Willner.—p. 78.
Rural Health in New Jersey. D. Bergsma.—p. 84.
Acridine-Sulfonamide Therapy of Trichomonas Vaginitis. R. A. Cacciarelli.—p. 87.

## New Orleans Medical and Surgical Journal

### 101:317-360 (Jan.) 1949

Pathology of Transfusion Reactions. S. H. Colvin Jr.—p. 317.
Causes and Prevention of Transfusion Reactions. J. W. Davenport Jr. —p. 320.
Anticoagulants in Treatment of Postpartum Venous Thrombosis and Embolism. J. E. Faber and W. F. Kvale.—p. 324.
Histoplasmosis. H. L. Mantz.—p. 328.
Pediatric Surgery H. Mahorner.—p. 332.
Unusual Manifestations of Coronary Heart Disease. T. H. DeLaureal. —p. 337.
Surgical Management of Uterine Retrodisplacements. C. G. Wichser and P. Graffagnino.—p. 339.
Stellate Block: Indications and New Approach. R. M. Rose.—p. 343.
Unusual Case of Foreign Body in Esophagus. J. R. Hanley and J. P. Swearingen.—p. 347.
Specific Treatment of Fractured Ankle. I. Redler.—p. 348.

## North Carolina Medical Journal, Winston-Salem

### 10:1-48 (Jan.) 1949

Treatment of Placenta Praevia. C. H. Mauzy.—p. 5.
Etiology, Prophylaxis and Diagnosis of Premature Separation of Placenta. Eleanor B. Easley.—p. 7.
Treatment of Premature Separation of Placenta. W. L. Thomas.—p. 10.
Antepartum and Postpartum Bleeding from Standpoint of General Practitioner. J. S. Brewer.—p. 12.
Control of Electrolyte and Water Balance in Surgical Patients. W. A. Wolff and Felda Hightower.—p. 14.
Photofluorogram of North Carolina Bureau of Tuberculosis Control. T. F. Vestal.—p. 17.
Streptobacillary Rat-Bite Fever in North Carolina. W. F. O'Connell and C. G. Watkins.—p. 19.
*Clinical Evaluation of Gastrointestinal Signs and Symptoms in Patients with Coronary Heart Disease and Recent Myocardial Infarction. J. D. Yeagley, D. Cayer and R. L. McMillan.—p. 22.
Acute Abdominal Conditions in Infancy. W. H. Breeden.—p. 27.

**Gastrointestinal Symptoms in Coronary Heart Disease.**—Yeagley and his associates point out that the gastrointestinal tract and the heart are so intimately associated through the vagus nerve that reciprocal disturbances are not surprising. The abdominal and gastrointestinal symptoms which frequently result from heart disease may be brought about by: (1) pain originating from the heart muscle itself but referred to the abdomen; (2) pain arising from congestion of the liver, spleen or other abdominal viscera secondary to congestive failure, and (3) pain arising from the localization of emboli thrown off from the heart. Abdominal pain, nausea, vomiting and liver enlargement are symptoms and signs which must be carefully evaluated in the differential diagnosis of cardiac and gastrointestinal disease. The authors made an analysis of 100 patients with proved recent myocardial infarction to determine the frequency and importance of gastrointestinal symptoms as manifestations of heart disease. They found that 40 of the 100 patients with proved myocardial infarct had abdominal pain and disorders of digestion. These symptoms rarely obscured the diagnostic features of the primary cardiac disturbance. In most instances, the presence of abdominal pain, tenderness, nausea and vomiting suggested a concomitant organic gastrointestinal disease. Physical and roentgen examinations carried out on these patients and the postmortem studies on 15 of them revealed that the majority of the patients had no associated organic gastrointestinal disease. This suggests that the abdominal complaints are often initiated reflexly from the heart itself, and are probably due to the proximity of the respective nerve pathways and related vagal reflexes rather than to congestion of the liver, spleen or intestinal mucosa.

## Ohio State Medical Journal, Columbus

### 45:101-196 (Feb.) 1949

Cancer Detection. G. M. Wilcoxon.—p. 125.
*Bifrontal Lobotomy for Relief of Organic Pain. H. E. LeFever. —p. 128.
*Sensitization to Penicillin: Types of Reactions; Therapy and Prevention. M. D. Feldman.—p. 131.
Early Ambulation in Postoperative Patients. H. P. Shapiro.—p. 136.
Xeroderma Pigmentosum: Report of Occurrence in 2 Japanese Siblings, with Secondary Epidermoid Carcinoma in 1 Case. P. A. Weisman. —p. 138.
Prophylactic Administration of Wheat Germ Oil Concentrate in Pregnancy; Clinical Analysis. Wynne M. Silbernagel and J. B. Patterson.—p. 141.
Positive Pressure. P. Katz.—p. 144.
Oxygen Therapy. F. Brosius.—p. 146.
Use of Tetra-Ethyl-Ammonium Chloride in Causalgia and Livedo Reticularis. B. Seligman.—p. 148.

### 45:197-316 (March) 1949

Postoperative Management of Patients with Gastrectomy. M. Wood. —p. 221.
Tell Them Not to Use Tourniquets. C. Minning.—p. 224.
Antibiotics and Prevention of Postoperative Pulmonary Complications. S. O. Hoerr.—p. 225.
Electrocoma Therapy: Six Year Follow-Up of a Series of Private Psychotic Patients Treated with Electrocoma Therapy. J. L. Fetterman, V. M. Victoroff and E. Bregman.—p. 229.
Some Phases of Postoperative Care in Gallbladder Surgery. G. G. Nelson.—p. 237.
Cosmetic Sensitivity. H. A. Haynes Jr.—p. 241.

**Bifrontal Lobotomy for Organic Pain.**—LeFever reports several cases in which lobotomy was carried out for the relief of organic pain. He had the opportunity to compare the relative merits of chordotomy and lobotomy in patients with similar lesions. He found that even though pain is relieved by chordotomy, there is still the fear of pain, whereas in the case of lobotomy both the pain and the fear of pain is eliminated. In the last 4 cases there was a structural basis for the pain. After lobotomy not only does the patient become indifferent to the pain, but he becomes oblivious to the fact that he harbors a serious illness. In the surgical procedures designed to relieve pain three stages can be differentiated. The first stage is the interruption of the peripheral nerve fibers (i. e., alcohol section or sympathectomy). In the second stage the central conduction pathways are cut in the cord, medulla or mesencephalon. In the third stage the anterior thalamic radiation is severed, producing a decrement in the psychic reaction to a painful stimulation.

**Sensitization to Penicillin.**—Feldman groups the adverse symptoms produced by penicillin into the following categories: It may act as a direct toxin or primary irritant; it may act as an antigen and stimulate antibody formation; it may induce a Herxheimer reaction; it may induce "therapeutic paradox;" it may induce organism resistance. The allergic reactions to penicillin, produced because of its antigenic properties, can be divided into several types: (1) allergic dermatitis of the contact type; (2) drug and serum-like reactions; (3) erythematovesicular group of reactions; (4) tuberculin type of reaction; (5) Arthus-like reactions. The allergic responses to penicillin may be severe and temporarily disabling. Spontaneous desensitization may occur. A plea should be made against indiscriminate use of penicillin. It is a highly sensitizing agent, and when it is used in minor disturbances, not only may these reactions result, but the patient may also become sensitized to future therapy with this valuable antibiotic agent.

## Pennsylvania Medical Journal, Harrisburg

### **52:**347-440 (Jan.) 1949

Differential Diagnosis of Acute Surgical Conditions of Abdomen. W. Walters.—p. 361.
Histoplasmosis in Pennsylvania: Confusion with Sarcoidosis and Experimental Therapy with Bacillomycin. H. A. Reimann and A. H. Price. —p. 367.
Virus Diagnostic Research Laboratory: Considerations of Its Importance in Maintaining Community Health Based on Two Years' Actual Operation. M. M. Sigel, W. Henle and T. F. M. Scott.—p. 372.
Improper Use of Estrogens in Gynecology. J. A. Hepp.—p. 379.
Management of Excessive Weight Gain in Pregnancy. J. R. Willson. —p. 384.
Unity in Thought and Practice. J. R. Hart.—p. 389.

## Philippine Medical Association Journal, Manila

### **24:**683-744 (Dec.) 1948

Past Experiences and Recent Advances on BCG Which Justify Its Use as Preventive Vaccine Against Tuberculosis in the Philippines. S. A. Francisco.—p. 683.
Thirteen Consecutive Cases of Peptic Ulcer. J. R. Estrada and P. T. Nery.—p. 693.
Liberal Diet (Meulengracht) in Management of Bleeding Peptic Ulcer. A. Liboro, H. A. Santos and R. Katigbak.—p. 699.
Results of BCG Vaccinations in Newborns in the Philippine General Hospital. E. Stransky, F. N. Quintos, A. P. Jongco and S. Mañalac-Morales.—p. 703.

### **25:**1-50 (Jan.) 1949

Psychosomatic Medicine in General Practice. R. V. Guiang.—p. 1.
Infectious Mononucleosis. A. V. Tupas, E. Stransky and A. P. Jongco. —p. 11.
Medical Service in Philippine Industry. J. S. Santillan and F. S. Soriano—p. 19.
Dacryocystorhinostomy as Practiced in North General Hospital. M. G. Tan.—p. 23.
Emotion as Factor in Physical Disease. T. Joson.—p. 27.

## Psychiatric Quarterly, Utica, N. Y.

### **22:**389-586 (July) 1948

Sublimation and Aggression. H. H. Hart.—p. 389.
*Electric Shock During Pregnancy: Report of 7 Cases. D. I. Doan and P. E. Huston.—p. 413.
Preliminary Report of Value of Pentothal Sodium as Prognostic Aid in 40 Mental Patients. D. A. Barbara.—p. 418.
Attitudes and Opinions Concerning Mental Illness. G. V. Ramsey and Melita Seipp.—p. 428.
Tuberculosis in a State Hospital: Practical Program with Five-Year Follow-Up. H. Pleasure.—p. 445.
Sleep Paralysis: Psychodynamics. J. M. Schneck.—p. 462.
Psychogenic and Organic Determinants and Their Evaluation in the Dyskinesias. L. J. Siegal.—p. 470.
Further Studies on Beating Fantasies. E. Bergler.—p. 480.
Post-Traumatic Syndrome. S. C. Karlan and E. Heller.—p. 487.
Statistical Study of Patients in the New York Civil State Hospitals, April 1, 1947. B. Malzberg.—p. 495.
Out-Patient Treatment of Pre-Psychotic and Post-Psychotic Veterans in Mental Hygiene Clinic. K. Nussbaum and S. Charen.—p. 516.
Combat Psychiatry in Infantry Division. T. P. Suratt.—p. 536.

**Electric Shock Therapy During Pregnancy.**—Doan and Huston add 7 new cases to the 9 previously reported, in which electric shock treatment has been used during pregnancy. The 7 patients reported here all received curare to soften the convulsions. One was treated in the first trimester, 4 in the second and 2 in the third. In all cases the pregnancy was not complicated by the treatment, and uneventful delivery of normal infants was accomplished at term. On the basis of this experience, and the reports in the literature, it would seem that pregnancy per se is not a contraindication to electric shock therapy. It also appears that curare may be used with safety.

## Public Health Reports, Washington, D. C.

### **64:**161-200 (Feb. 11) 1949

British National Health Service. B. M. Davis.—p. 161.

### **64:**201-228 (Feb. 18) 1949

Transparent Dextrose Serum Tellurite Plating Medium. Its Use as an Adjunct to Microscopic Examination of Smears Made from Loeffler Slants in Routine Diphtheria Diagnosis. Ona R. Whitley and S. R. Damon.—p. 201.
Flocculation Test as Possible Method for Differentiating Immunologic Types of Poliomyelitis Virus. E. C. Roberts.—p. 212.

## Radiology, Syracuse, N. Y.

### **52:**157-308 (Feb.) 1949

Diagnosis of Congenital Obstruction of Stomach and Small Intestine in Newborn. E. V. Baeyer.—p. 157.
*Diagnosis of Hypopituitarism Associated with Chromophobe Tumor (Presumed or Verified). L. M. Hurxthal and O. Z. Younghusband.—p. 179.
*Diagnosis and Treatment of Pineal Tumors. G. Horrax.—p. 186.
Roentgenologic Diagnosis of Pituitary Tumors. H. F. Hare, Esther Silveus and M. I. Smedal.—p. 193.
Roentgen Treatment of Bronchial Asthma. E. T. Leddy and C. K. Maytum.—p. 199.
Radiation Necrosis of Jaw. E. M. Daland.—p. 205.
Roentgen Irradiation of Thrombophlebitis. J. S. Bouslog.—p. 216.
Carcinoma and Other Neoplasms of Male Breast. B. A. Payson and Rieva Rosh.—p. 220.
Further Studies on Radiosensitivity of Tumors Autogenous to Homozygous Hosts. Anna Goldfeder.—p. 230.
Absorption of X-Rays in Air. F. H. Day and L. S. Taylor.—p. 239.
Role of Roentgenologist in Proposed Plan for Small Film Screening of Inhabitants of Major Cities. T. F. Hilbish.—p. 248.

**Hypopituitarism Associated with Chromophobe Tumor.**—Hurxthal and Younghusband say that a presumptive diagnosis of chromophobe tumors rests on the finding of an enlarged sella and evidence of visual change or hormonal deficiency, or both. They believe all enlargements of the sella turcica should be considered due to some abnormality whether or not there is clinical evidence of secondary effects. They regard chromophobe tumors as much more frequent than is generally believed, pointing out that in some cases there may be no hormonal change as long as there is sufficient normally functioning pituitary tissue. In others, there may be only mild degrees of pituitary failure, while in some there may be evidence of almost complete failure. Today there are numerous tests which are of great help in detecting these hormonal deficiencies, especially when clinical evidence is equivocal. The authors mention the various tests of hormonal deficiency: those involving the thyroid, adrenal and gonadal functions and those concerned with the carbohydrate metabolism. They feel that these tests should be carried out whenever enlargement of the sella is found. Visual field examinations and determination of visual acuity should be done in all cases in which the sella is enlarged. The authors emphasize the importance of a careful history and discuss the variable and somewhat contradictory findings in patients with chromophobe tumor. Roentgen treatment rarely restores normal pituitary function. Pituitary extracts are not satisfactory, although temporary effects have been observed after administration of thyrotropic and chorionic gonadotropins. Adrenocorticotropic extract is not effective if hypopituitarism exists. Two synthetic substances have proved effective and convenient. These are testosterone and desoxycorticosterone. Desiccated thyroid in doses of not over 1 grain (60 mg.) a day may be used, but the authors advise against the use of estrogens, because they suspect that estrogens may stimulate chromophobe tumor growth.

**Pineal Tumors.**—According to Horrax pineal tumors are among the rarer forms of intracranial new growths. During recent years it has been realized that certain of them respond extremely favorably to either operative or roentgen therapy, or at times to a combination of the two. He reviews observations on the 22 patients in whom the diagnosis of pineal tumor has been made. In 14 instances this diagnosis was verified at operation or at necropsy. In the other 8 patients the diagnosis has been made by the combination of localizing neurologic signs confirmed by the ventriculographic evidence of a mass projecting into the posterior portion of the third ventricle. Of the 22 patients there were 10 who had grossly complete operative removal of their tumors. Four of these operations were undertaken because decompression followed by roentgen treatment had failed. Three patients in this group of 10 are alive and well, ten, five, and three years after the operation, respectively. Twelve patients have been subjected to a simple decompression or a biopsy of the tumor. Those who survived have been given deep high voltage roentgen therapy. Four patients in this group have had their tumors verified histologically, while the diagnosis in the other 8 rests on the neurologic and ventriculographic findings. In this group of 12 there are 7 patients who have been alive and well from two to fifteen years. Three of them have moderate diabetes insipidus. One other patient had decompression and therapy only three months ago. Her pressure symptoms have not yet subsided. The remaining 4 patients died within a few days to a year after their operations.

## Rhode Island Medical Journal, Providence

### 32:1-60 (Jan.) 1949

Cancer of Uterus. G. W. Waterman and S. I. Raphael.—p. 15.
Cancer Detection Clinic. H. C. Pitts.—p. 19.
Tumor Clinics. J. F. Kenney.—p. 21.
Rhode Island State Department of Health Cancer Control Program. W. Batchelder.—p. 24.

### 32:61-120 (Feb.) 1949

Spontaneous Pneumothorax. J. N. Corsello.—p. 75.
Dermofragility with Dermo-Hyperlaxity-Hyperelasticity and Arthro-Hyperlaxity (Ehlers-Danlos Syndrome): Additional Data on Case Reported Twelve Years Previously. F. Ronchese.—p. 80.
Anoxia of Newborn. W. P. Shields.—p. 84.
Prevention of Anoxia of Newborn from Obstetrical Viewpoint. W. J. Dufresne.—p. 86.

## South Carolina Medical Assn. Journal, Florence

### 45:29-64 (Feb.) 1949

Advances in Therapeutics: During Life of the Pee Dee Medical Association. O. W. Bethea.—p. 29.
Ectopic Pregnancy: Analysis of 100 Consecutive Cases. J. E. Zeliff, R. B. Means and H. H. Fouche.—p. 33.
*Histoplasmin Sensitivity in Columbia, South Carolina. J. G. Seastrunk and W. Cullum.—p. 37.
Wilms Tumor—Report of Six Year Postoperative Cure. K. M. Lippert. —p. 39.
Objectives of State Committee on Maternal Mortality. J. D. Guess. —p. 42.

**Histoplasmin Sensitivity.**—Seastrunk and Cullum tested 1,000 patients, 514 men and 486 women, with histoplasmin intradermal antigen at the Richland County Tuberculosis Clinic in Columbia, S. C. Thirty-nine of the patients tested were observed to be positive reactors (3.9 per cent). There were about 1.5 per cent more reactors in the white patients than in the Negroes, and 1.5 per cent more reactors in men than in women. There were no positive reactors between the ages of 1 and 5 years; there was 1 positive reactor among 76 patients between the ages of 6 and 10 years, 7 positive reactors in 465 patients between the ages of 11 and 20 years and 31 positive reactors in 438 patients aged over 21. Each of the 1,000 patients received a tuberculin test. There were 413 positive tuberculin reactors as compared with the 39 positive histoplasmin reactors. Thirty patients had positive reactions to both histoplasmin and tuberculin. Pulmonary calcification was present in 13 of the 39 positive histoplasmin reactors, while only 10 of the 413 positive tuberculin reactors presented pulmonary calcification. Histoplasmosis should be considered in the differential diagnosis of pulmonary diseases resembling tuberculosis in patients with negative sputum and negative tuberculin reactions.

## Southern Medicine and Surgery, Charlotte, N. C.

### 111:29-60 (Feb.) 1949

*Carcinoma of Cervix—Review of 100 Cases. E. M. Baker.—p. 29.
Abnormal Vaginal Bleeding. G. S. Edgerton.—p. 37.

**Carcinoma of the Cervix.**—Baker reports 100 patients with cancer of the uterine cervix. According to the League of Nations Classification, 11 belonged to group I, 18 to group II, 22 to group III and 49 to group IV. A combination of intracavitary cone roentgen radiation, external roentgen radiation and radium was given to 46 of the patients, with 19 (45 per cent) surviving five years or longer. Combined intracavitary and external roentgen radiation was applied to 26 patients, with 8 (31 per cent) surviving five years or longer. Three patients were treated with radium alone, and 2 of the 3 lived five years or longer. Three patients with stage I carcinoma were treated with a combination of radium and surgery with a 100 per cent five year survival. The cornifying and the noncornifying squamous cell carcinomas showed the same five year survival rate—i. e., 26 per cent. Seven of 21 patients (33 per cent) with stage IV carcinoma treated with combined intracavitary and external roentgen radiation survived five years, while only 2 of 15 patients (13 per cent) in this stage survived five years when treated with radium, intracavitary roentgen radiation and external roentgen radiation. Thirteen of the 100 patients in whom the cervical cancer was completely destroyed, leaving no local evidence of the disease, succumbed to metastases two to five years following the initial treatment. Autopsies revealed that radium is contraindicated in pelvic inflammatory disease; the cachexia observed was out of all proportion to the extent of malignant tissue; the degree of cachexia and the degree of anemia bore no direct relation to the amount of radiation used. Metastasis occurred most frequently into the cervical parametrium and into the vaginal mucosa. Hydroureter and hydronephrosis occurred in about 70 patients due to ureteral compression, scar tissue and tumor.

## Southwestern Medicine, El Paso, Texas

### 29:21-40 (Feb.) 1949

Management of Bronchiectasis. C. R. Sounders.—p. 27.
Recurrent Volvulus with Unusual Complication. J. L. Green.—p. 32.

### 29:41-60 (March) 1949

Use of Chemotherapeutic Agents in Obstetric Practice. E. D. Plass. —p. 48.
Saddle Block Anesthesia in Obstetrics: Review of 121 Cases. G. M. Carpenter.—p. 54.

### 29:61-80 (April) 1949

Acute Abdomen in Children. J. Lozoya.—p. 66.
Neurosurgical Relief of Pain. W. A. Jones.—p. 71.
Report of Fractures at El Paso City-County Hospital. V. R. May Jr. and W. C. Basom.—p. 74.

## Texas State Journal of Medicine, Fort Worth

### 45:69-118 (Feb.) 1949

Essential Hypertension. G. Graves.—p. 76.
*Treatment of Myocardial Failure: Studies of New and Safe Diuretic—Thiomerin.® G. R. Herrmann, J. W. Chriss, M. R. Hejtmancik and P. M. Sims.—p. 79.
Prognosis of Bundle Branch Block. O. B. Gober and J. Q. Sloan. —p. 82.
Surgical Treatment of Congenital Heart Defects. J. W. Duckett. —p. 84.
Vitamin E in Heart Disease. M. M. Minter.—p. 88.
Cardiac Aspects of Urologic Surgery. M. M. Scurry, H. M. Spence and S. S. Baird.—p. 89.

**New Diuretic in Myocardial Failure.**—Herrmann and associates report their experiences with thiomerin® (disodium salt of N[gamma-carboxymethyl-mercaptomercuri-beta-methoxy] propyl camphoramine acid). They injected thiomerin® subcutaneously in 100 cardiac patients and intravenously in 50 patients. The drug was given in 2 cc. doses subcutaneously for five days in succession. Some patients have had as many as twenty 2 cc. subcutaneous injections of thiomerin® without untoward effects. The authors believe that the compound has advantages over the older organic mercurials. It is less toxic and less irritating. It is the only organic mercurial diuretic that is tolerated in the subcutaneous tissue; it must not be injected into edematous skin or adipose tissues. It may be used as a test in from 0.25 to 0.5 cc. doses subcutaneously in any patient suspected of hypersensitivity to mercury. The diuretic potency is at least comparable to that of the older preparations. It is generally less dramatically dehydrating on the first day but more persistent in effect for two or three days. Acid salts augment the diuretic action to the point that half or less doses, 0.5 to 0.75 cc. (20 to 30 mg.), are effective. Electrocardiographic studies after an injection of thiomerin® showed no changes in conduction or significant changes in rhythm. Only in 3 patients were occasional premature contractions recorded. Studies revealed evidences of renal irritation in a few instances, but not any more than after the use of other mercurials. Thiomerin® has been given on five successive days without producing albuminuria, cylindruria or hematuria.

## Wisconsin Medical Journal, Madison

### 48:101-204 (Feb.) 1949

Clinical Supervision of Child Development. A. Gesell.—p. 119.
Carcinoma of Rectum: Treatment with Preservation of Sphincters. W. G. Maddock.—p. 124.
Carcinoma of Breast. C. W. Eberbach.—p. 132.
Place of Nutrition in Practice. J. B. Youmans.—p. 139.
Unusual Case of Dysgerminoma of Ovary. L. Milson and H. J. Karol. —p. 143.
The Need for Physicians. A. R. Curreri.—p. 147.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

### British Journal of Radiology, London

22:61-122 (Feb.) 1949

*Vascularization of Human Stomach: Preliminary Note on Shunting Effect of Trauma. A. E. Barclay and F. H. Bentley.—p. 62.
Diagnosis of Chronic Subdural Hematoma in Children and Adolescents. J. W. D. Bull.—p. 68.
Aluminum Filter for Use in Localization of Placental Site. F. Reid. —p. 81.
Cysticercosis: Discussion and Presentation of Case. W. H. McMenemey and A. A. Vickers.—p. 84.
Chordomata, with Report of Sacro-Coccygeal Case. H. Halper.—p. 88.
Influence of Tumor Histology, Duration of Symptoms and Age of Patient on Radiocurability of Cervix Tumors. M. Gilmour, A. Glücksmann and F. G. Spear.—p. 90.
Integral Dose Received from Uniformly Distributed Radioactive Isotope. F. Bush.—p. 96.
Some Experiments with A 14 Mev. Betasynchrotron. D. J. Allen-Williams and R. K. Appleyard.—p. 106.
Method of Estimating Time at Which Counting Rate Changes, Using Geiger-Müller Counter. S. B. Osborn and H. P. Wright.—p. 110.

**Vascularization of Human Stomach: Shunting Effect of Trauma.**—Barclay and Bentley say that in the course of an investigation into the blood vessels of the ulcerated stomach it became evident that the circulation through the gastric vessels is modified as a result of surgical operation. The mucous membrane of stomachs removed at operation is excluded from the active circulation in the stomach wall, further studies indicating that this is brought about by an arteriovenous shunt, similar to that described in the kidney. The authors describe experiments during which radiopaque substances were injected at pressure into the arteries of the stomach excised for duodenal ulcer or removed from a cadaver. Their observations indicated that there is an arteriovenous anastomosis or shunt located in the submucous plexus. Observations were made also in the course of operations. The authors deduce from their studies that there are arteriovenous anastomoses in the region of the submucous plexus of vessels, the opening of which excludes active circulation through the vessels of the mucous membrane. When the peritoneal cavity is opened and the stomach handled at operation the shunt comes into play, and this condition persists in the excised stomach wall after the operation. There is some evidence indicating that the arteriovenous anastomoses in the stomach wall are under the control of the autonomic nervous system, for when the sympathetic outflow to the stomach is blocked by means of spinal anesthesia the shunts do not open, and injection of the stomach vessels reveals complete filling of the extensive blood supply of the mucous membrane. In an editorial comment on these investigations, Alvarez, in the same issue, suggests that the shunt appears to be opened up under nervous stress. Such a mechanism could explain the sudden formation of peptic ulcers and especially of the acute penetrating or perforating ulcers which are seen so commonly in persons who die with a brain tumor or after an operation on the brain or an operation on a highly toxic goiter. Perhaps now a cure for ulcer can be secured if some way can be found of denervating this shunt.

### British Medical Journal, London

1:333-378 (Feb. 26) 1949

Pain in Childbirth: Report of Subcommittee of Medical Women's Federation; Statistical Analysis of Some Replies to Questionnaires. K. K. Conrad.—p. 333.
*Tuberculous Meningitis: Early Diagnosis, and Review of Treatment with Streptomycin. J. Rubie and A. F. Mohun.—p. 338.
*Nasal Carriers and Streptococcal Tonsillitis. G. T. Cook and D. Munro-Ashman.—p. 345.
Spontaneous Perforation of Esophagus: Surgical Repair, with Recovery. J. Scholefield.—p. 348.
Rupture of Intestine Due to Non-penetrating Injury: Unusual Accidents from Mechanical Saw. H. L. M. Roualle.—p. 350.

**Tuberculous Meningitis.**—Rubie and Mohun analyze the clinical and laboratory aspects of 76 patients, in 67 of whom a diagnosis of tuberculous meningitis was made. The remaining 9 patients, who recovered without streptomycin therapy, included 5 tuberculous subjects with a meningeal reaction who may have had serous tuberculous meningitis. Observations of the 9 patients prove that patients may present a history of contact with tuberculosis, with evidence of extrameningeal tuberculosis, and with abnormal cerebrospinal fluid, and yet may not have what is ordinarily regarded as tuberculous meningitis. Mental apathy is an important early diagnostic feature. In 3 cases of tuberculous meningitis the cerebrospinal fluid was normal in the earliest stage in spite of clinically suggestive features. Diagnostically important cerebrospinal fluid changes are fall in sugar, rise in protein and pleocytosis. Prior to and within forty-eight hours of admission acid-fast bacilli were seen in the cerebrospinal fluid in 39 cases. Mycobacterium tuberculosis was recovered by culture and/or guinea pig inoculation in 58 cases. Diagnosis by one or both of these criteria was established in 62 cases. The scheme of streptomycin therapy followed by the authors is: intrathecal and intramuscular treatment, 28 days; intramuscular treatment, 28 days; intrathecal and intramuscular treatment, 28 days; rest period of 28 days, and intramuscular treatment only, 28 days. The intramuscular dose is 0.02 Gm. per pound (0.45 Kg.) of body weight in twenty-four hours, given every six hours. The intrathecal dose is 0.1 Gm. in 10 cc. of isotonic sodium chloride solution daily. Further treatment is given subsequently if indicated. Reviewing the results of this treatment of 54 patients followed up for a minimum of eight months, the authors say that 18, or one third, survived, 16 of them showing complete clinical recovery. Two survivors had a history of relapse and showed definitely abnormal cerebrospinal fluid. Ten patients were operated on for relief of hydrocephalus. While surgical intervention seems to offer a logical approach to the relief of the hydrocephalus, the results have been disappointing. Only 1 of the 10 patients thus treated survived, but in other cases life was prolonged. Early diagnosis and good nursing are important factors.

**Nasal Carriers and Streptococcal Tonsillitis.**—The outbreak of tonsillitis described by Cook and Munro-Ashman involved 57 out of 340 boys, who were housed in five separate buildings. The pattern of the daily incidence of new infections suggests that the epidemic spread fairly rapidly through a house during the three weeks after the return of H., a heavy nasal carrier. During the first eighteen days after the return of H., 17 new cases occurred among the boys in dormitories and 9 among those in single rooms, the number at risk being 47 and 85, respectively. Thirteen of the 17 dormitory cases occurred in three dormitories where 27 boys were at risk. It is clear that during this time boys in dormitories suffered more heavily than the others and that most of the cases came from three of the six dormitories. Streptococci of the epidemic type were isolated from the dust before the majority of dormitory infections had occurred. In addition to the possibility of infection being transmitted more or less directly from the carrier, the dormitory population was thus also exposed to the further risk of a heavily infected environment. Experience of this and other epidemics has shown the frequent association of heavy nasal carriers with outbreaks of streptococcic tonsillitis in residential schools. Nasal as well as throat swabs should be obtained in all cases, however mild the disease; heavy nasal carriers should be treated until their swabs are negative. This is especially necessary in the early stages of an outbreak before widespread contamination of the environment and the build-up of a carrier rate has occurred.

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Causation of Acute Arterial Necrosis in Hypertensive Disease. F. B. Byrom and L. F. Dodson.—p. 357.
Mutation in Single-Cell Culture of Corynebacterium Diphtheria. W. Goldie, M. Gordon and K. I. Johnstone.—p. 369.
Trilocular Heart with Bilateral Aneurysmal Dilatation of Pulmonary Arteries. G. J. Cunningham.—p. 379.
Ebstein's Anomaly of Tricuspid Valve. K. Walton and A. G. Spencer. —p. 387.
Starch-Fermenting Gelatin-Liquefying Corynebacteria Isolated from Human Nose and Throat. W. H. H. Jebb.—p. 403.
Epithelial Lesions in Respiratory Tract in Human Influenzal Pneumonia. M. Straub and J. Mulder.—p. 429.
Observations on Hepatotoxic Action of Carcinogen p-Dimethyleminoazobenzene. J. W. Orr and D. E. Price.—p. 461.
Idiopathic ("Isolated") Myocarditis in Infancy. C. Raeburn.—p. 477.
Liposarcoma Arising in Simple Lipoma. C. J. E. Wright.—p. 483.
Disseminated Focal Necrosis with Eosinophilia and Arteritis in Case of Asthma (? Loeffler's Syndrome). J. F. Smith.—p. 489.

# Book Notices

**Lung Dust Lesions Versus Tuberculosis.** By Lewis Gregory Cole, M.D., F.A.C.R. Cloth. Price, $10. Pp. 474, with illustrations. American Medical Films, Inc., 8 Church St., White Plains, N. Y., 1948.

This work is a contribution to the frequently perplexing subject of the differentiation between the lesions of the pneumonoconioses, such as silicosis, and those that result from other causes, particularly tuberculosis. The author's approach as discussed in the preface is essentially that of exhaustive study of pathologic and roentgenologic material correlated with personal occupational and clinical histories when possible, or those of others when personal examinations could not be arranged. His main aims are (1) to correlate pathologic and radiologic data, (2) to describe and illustrate radiologic findings and interpret them into radiologic diagnoses, (3) to identify pulmonary lesions of dust origin as distinguished from those of tuberculosis and (4) to facilitate thereby the equitable settlement of medicolegal questions of concern to both management and labor. He makes no claim that any of his investigations are original, but points out that some of the observations may not be familiar to many others in this field.

The author presents a synopsis of the problems encountered in an exploration of the subject, pertinent to the industrial physician, the radiologist, pathologist, petrologist, physicist and x-ray technician.

As a basis for his studies an extensive collection of gross specimens, microscopic sections and roentgenograms was assembled from a wide range of sources in this country and Canada through the cooperation of roentgenologists, clinicians and pathologists. The text is liberally illustrated with halftone cuts in black and white. The running captions describing the figures are printed in bold face type. A characteristic feature of the book is the wealth of this material, affording a comprehensive coverage of various types of lung dust lesions compared to those of tuberculous origin. The pathology of lung dust lesions is considered under six types, illustrated with schematic drawings and roentgenograms correlated with pathologic appearances.

Two chapters of outstanding interest merit special mention; one dealing entirely with the roentgenologic diagnosis of lung dust disease as differentiated from tuberculosis, and another concerned with combined dust and tuberculous lesions (silicotuberculosis). This work is a valuable addition to the literature of the pneumonoconioses and should serve as a highly useful source of information for industrial physicians, roentgenologists and pathologists confronted with the problems of the differential diagnosis of silicosis or other dust diseases.

**Biological Reactions Caused by Electric Currents and by X-Rays: A Theoretical Study of the Phenomena of Excitation in the Nerve by Different Electric Currents and of the Biological Reactions Caused by X-Rays, Both Based Upon a Common Principle.** By J. Th. van der Werff, M.D., D.Sc. Cloth. Price, $5. Pp. 203, with 38 illustrations. Elsevier Pub. Co., 215 4th Ave., New York 3, 1948.

Seldom does one find a physician who is at the same time a mathematician and a physicist. When one recalls the startling discoveries made in the field of physics with the help of mathematics—e. g., Einstein's derivation of the relation between energy and mass—it is reasonable to believe that through the medium of mathematical deduction things unknown in biologic and physiologic processes might be discovered.

This volume is a mathematical treatise on biologic and physiologic problems. Two subjects are discussed: (1) "the phenomena of excitation caused by electric currents and especially those of excitation of the nerve," and (2) "the biological reactions caused by x-rays are analogous to such an extent that it is highly probable that they may be explained from a common principle." The book is in three parts: part I, General Introduction and Essentials; part II, Electrical Excitation of the Nerve, and part III, Biological Reactions Caused by X- and Y-Rays. It contains many diagrams, charts and formulas.

A general practitioner, unless he is well versed in calculus and differential equations, will not get much out of the book. This volume is especially recommended as a reference for the research man, mainly in the fields of biophysics and radiology.

**Modern Pattern for Marriage: The Newer Understanding of Married Love.** By Walter R. Stokes, LL.B., M.D. Cloth. Price, $2.25. Pp. 143, with 4 illustrations. Rinehart & Co., Inc., 232 Madison Ave., New York 16, 1948.

In recent years, books relating to marriage and sex problems have appeared in such large numbers that another would seem unnecessary. This statement, however, does not hold true for "Modern Pattern for Marriage" by Walter R. Stokes. This book should go a long way toward saving many marriages.

Dr. Stokes has given the theme for his book in the dedication, which reads, "Dedicated to the elimination of superstition and fear from our sex life and to the development of more realistic patterns for finding and conserving happiness in marriage."

According to Dr. Stokes, healthy attitudes about sex which are essential to a happy marriage literally begin at birth. While he believes that nearly all human beings are born with the instinctual and intellectual capacity for a successful marriage, he is convinced that the manner in which instinct and intellect are guided throughout childhood will determine whether this will be achieved.

Throughout the entire book, which is packed with important factual information about every aspect of marriage, Dr. Stokes has presented his material in such an objective, common sense manner that the reader is bound to assimilate some of his sane and sensible philosophy of marriage. This, it seems, is the major contribution of the book and the feature which makes it stand out from other books in the field.

The important topics covered in the different chapters of the book include the anatomy and physiology of sex, premarital sexual habits and experiences, premarital medical counsel, the honeymoon, problems of early and later marriage, and guiding children toward a sane marriage. There is an excellent glossary of technical terms, a list of books and publications on marriage and family life, and one of national organizations concerned with the problems of marriage and the home.

**British Surgical Practice.** Under the General Editorship of Sir Ernest Rock Carling, F.R.C.S., F.R.C.P., Consulting Surgeon, Westminster Hospital, and J. Paterson Ross, M.S., F.R.C.S., Surgeon and Director of Surgical Clinical Unit, St. Bartholomew's Hospital, London. In Eight Volumes (With Index Volume). Volume 4: Facial Palsy to Hiccup. Cloth. Price, $15. Pp. 486, with 263 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3; Butterworth & Co., Ltd., 4-6 Bell Yard, Temple Bar, London, W.C. 2, 1948.

The fourth volume in the excellent series covers subject matter from facial palsy to hiccup. Facial palsy as caused by trauma during mastoid operations is given prominence. The operation for mastoiditis is performed infrequently when compared with former years. More emphasis might be placed on injury to the seventh cranial nerve and its branches in operation for high cervical lymph nodes.

Gallie's article on fascial grafts is good and will appeal to the surgeon. Fibrositis is another well discussed topic. The subject of fractures and dislocations is covered briefly, but the discussion appears to be adequate. Gout, gonorrhea, foot surgery, hand surgery, gallbladder surgery and gastrocolic fistula are other topics. Much space is devoted to repair of hernia. Many related subjects necessary for adequate criticism will be dealt with in succeeding volumes. Thus far the objectives of the publishers and editors seem to be fully obtained. The praise of preceding volumes is extended to this one.

**Social Medicine: Its Derivations and Objectives.** Edited by Iago Galdston, M.D. The New York Academy of Medicine, Institute on Social Medicine, 1947. Cloth. Price, $2.75. Pp. 294. Commonwealth Fund, Division of Publications, 41 E. 57th St., New York 22; Oxford University Press, Amen House, Warwick Sq., London, E.C. 4, 1949.

By sponsoring an Institute on Social Medicine in connection with its Centennial Celebration in 1947, the New York Academy of Medicine courageously advanced into a vast territory badly needing thorough exploration through teamwork. The papers read at that time, together with introductory remarks by the three physicians primarily responsible for the organization of the institute, form the content of this notable book.

The rapid advance of scientific medicine and the profound socioeconomic changes that have taken place since the nineteenth century have led not only to the rediscovery of old modes of thought and their reappraisal in the light of modern concepts but also to the study of long-known methods of social action and the evaluation of their merits and applicability under present conditions. Social medicine is a living concept, but its objectives, content, place among the scientific disciplines, methodology and relationship to such fields as preventive medicine and public health are far from clearly defined. At present the term social medicine is used to denote some or all of the following subject matters: the bearing of socioeconomic conditions on the health of the individual and the community; the effect of illness on the socioeconomic conditions of the individual, family, community and nation; the importance of socioeconomic methods to the prevention of disease and the reduction of its frequency and severity, and the organization and administration of health service and medical care programs.

Directly or indirectly all these subjects receive attention in this carefully edited, systematically arranged and well printed book which embraces the labors of many men from widely diversified fields of experience. The broad ramifications of what is interpreted as social medicine become apparent, much useful information is imparted and a forceful argument is presented for more orderly study of the many intricate problems involved as well as for more systematic coordination of effort.

**Techniques of Histo- and Cytochemistry: A Manual of Morphological and Quantitative Micromethods for Inorganic, Organic and Enzyme Constituents in Biological Materials.** By David Glick, Ph.D., Associate Professor of Physiological Chemistry, the Medical School, University of Minnesota, Minneapolis. With a foreword by Robert R. Bensley, M.B., D.Sc. Cloth. Price, $8. Pp. 531, with 159 illustrations. Interscience Publishers, Inc., 215 4th Ave., New York 3, 1949.

This long-awaited book on an advancing field embracing many overlapping sciences will satisfy a need felt by biochemists, physiologists and morphologists. It consists largely of selected technical procedures described in the literature dealing with both the descriptive and quantitative aspects of the subject. The greater part of the book is devoted to quantitative methods, and these are well treated, particularly those developed by the Carlsberg Laboratories in Copenhagen.

The section dealing with descriptive methods involving only localization of substances in cells and tissues could be greatly improved, both as to selection of methods and as to a discussion of principles involved. This part of the book is surpassed by the more critical but outdated book by Lison. The section dealing with deductive methods is inadequate in view of important contributions made with them. Omitted almost entirely is a consideration of methods employed in elucidating the molecular structure and organization of cells.

A serious question that the writer of any advanced textbook on technics must face is whether the methods employed may be separated from a consideration of results obtained through their use. The extent to which this was practiced in this book may perhaps constitute a weakness. However, as reference is made to over six hundred titles in the literature, this objection may not be so important. The book is well printed, with numerous clear line diagrams and drawings and with a considerable amount of clear space for notes.

**Medical Statistics from Graunt to Farr.** By Major Greenwood, D.Sc., F.R.C.P., F.R.S. The Fitzpatrick Lectures for the Years 1941 and 1943, Delivered at the Royal College of Physicians of London in February 1943. Cloth. Price, $2. Pp. 73. The Macmillan Company, 60 Fifth Ave., New York 11; Cambridge University Press, Bentley House, 200 Euston Road, London, N.W. 1, 1948.

Doctor Major Greenwood traces the history of vital statistics and medical statistics from the early contributions of John Graunt and Sir William Petty in the seventeenth century to the time of William Farr in the nineteenth century. The development of the earliest life tables and the introduction of the collection of vital statistics occurred in this interval. The enumeration of populations was developed as a result of the works of these early pioneers in medical statistics. While the methodology of the times was exceedingly meager, the fundamental problems of vital statistics were sufficiently realized that the concept of standardized death rates was introduced. Greenwood's writing follows an essay style and is particularly noteworthy for its evaluation of the contributions of the early investigators on the basis of their personality. This book is not mathematical and could be enjoyably read by any physician.

**The Treatment of Pneumococcic Pneumonia in the Adult.** By Morris F. Collen, M.D., Director, Department of Medicine, Permanente Foundation Hospital, Oakland, Calif. Cloth. Pp. 166, with 40 illustrations. Permanente Foundation, 1924 Broadway, Oakland 12, Calif., 1948.

This book is a thorough compilation and critical analysis of experience with the treatment in 3,000 cases of pneumococcic pneumonia at the Permanente Foundation Hospital at Oakland between the years 1942 and 1947. All phases of the specific and general therapy of the patients are discussed and authenticated by presentation of data from this experience. The clinical aspects of the disease are also presented and include the various types of complications of the pneumonia as well as the various predisposing factors and complications due to underlying diseases in the patient. The management of these complications and their effect on the prognosis are also discussed and authenticated by analysis of the results of the experience in the series of cases presented. Individual cases are frequently cited to illustrate important points. There are numerous tables simply arranged, and also many clear graphic charts demonstrating the points that the author discusses.

The book is well bound and clearly printed on good paper which has permitted fine reproduction of roentgenograms and photographs. There is also an index and a bibliography of 179 references, many of them, of course, to the papers published by the author and his co-workers during the course of the accumulation of material which is summarized in this volume. The book will be read with considerable interest by all internists and is a useful addition to the classical volumes on pneumonia by Bullowa, Reimann and Heffron.

**Changing Disciplines: Lectures on the History, Method and Motives of Social Pathology.** By John A. Ryle, M.D., Professor of Social Medicine in the University of Oxford, Oxford. Oxford Medical Publications. Fabrikoid. Price $3.75. Pp. 123, with 13 illustrations. Oxford University Press, 114 Fifth Ave., New York 11; Amen House, Warwick Sq., London E.C. 4, 1948.

The author is the head of the Institute of Social Medicine at the University of Oxford. The lectures here included were developed for the New York Academy of Medicine and the Johns Hopkins Medical School. As a pioneer in the organization of education in the field concerned, all that Professor Ryle has to say is of interest to the physician. Among the most interesting of the essays is that dealing with medical ethics and the new humanism, since it provides opinions and information on problems that are today rather controversial. One finds Dr. Ryle saying that the decline in infant mortality can be attributed in large part to general social betterment and the falling birth rate, whereas Sir Stafford Cripps recently gave most of the credit in Great Britain to nationalization of medicine.

**Hutchison's Food and the Principles of Dietetics.** Revised by V. H. Mottram, M.A., and George Graham, M.D., F.R.C.P., Consulting Physician to St. Bartholomew's Hospital, London. Tenth edition. Cloth. Price, $6.75. Pp. 727, with 28 illustrations. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

This tenth edition of a work well established in Great Britain represents an extensive revision with the addition of much new material. The sections on obesity, diseases of the liver, rickets and scurvy have been revised, and the authors have apparently considered it worth while to make a scientific criticism of the Hay diets, which by this time arouse little or no interest in the United States, where they were concocted. The Hay diets are included with such other peculiar concoctions as vegetarian, fruit and raw vegetable, exclusive protein, meat juice and similar diets. The authors say that they do not propose to give any details of these diets as they can say unhesitatingly that they are dangerous.

**Essays on Historical Medicine.** By Bernard J. Ficarra, A.B., Sc.B., M.D., Professor of Research Biology in Charge of Experimental Physiology, St. Francis' College, Brooklyn, N. Y. Cloth. Price, $5. Pp. 220, with illustrations. Froben Press, Inc., 1776 Broadway, New York 19, 1948.

Most of the essays in this book were prepared for reading to medical organizations, and their central theme is surgery and pathology. Among the most interesting of all of the essays is one called "Famous Autopsies in History," previously in the *Annals of Medical History*.

**The Diagnosis of the Acute Abdomen in Rhyme.** By Zeta. Second edition. Cloth. Price, 6s. Pp. 93, with drawings by Peter Collingwood. H. K. Lewis & Co., Ltd., 136 Gower St., London, W.C. 1, 1949.

The author's objective in this book of rhyme is to amuse while he tries to teach. He does not claim to be a poet; neither is he a professional humorist. However, the line drawings by Peter Collingwood are clever and humorous. The subjects about which the author endeavors to rhyme are intestinal obstruction, ectopic gestation, peritonitis, pancreatitis, colic, acute dilatation of the stomach, and treatment. The trend of his rhyme is toward problems of diagnosis and pathology. For example:

True renal colic one can soon decide
For all the pain is felt on the one side
And when you come to make examination
The kidney may be tender on palpation,
While pain may radiate to—inter alia—
The iliac region or the genitalia;
And here, although the caution somewhat trite is,
Remember renal colic on the right is
Oft taken for a plain appendicitis.
A specimen of urine you must see
And look if blood or gravel there may be,
Nor must you fail to make interrogation
For frequency and pain on urination.
*Thus soon will you make up your hesitating mind*
*And renal colic as the diagnosis find.*

* * * * *

Now biliary colic is a terrible complaint
The pain is so severe that oft the patient feels quite faint;
'Tis felt around a zone served by the nerves 8 and 9 D
Which roughly means the place where your pyjama cord should be.
In fact I've oft been told that when the pain is at its height
It feels as if that cord were tied immeasurably tight.

A smoother group of lines follows his attempt to teach the subject of ectopic gestation:

In seeking for his mate the eager sperm
Up the fallopian tube his way doth worm
And in that narrow channel often meets
The lovely ovum whom with joy he greets
And soon the happy union completes.
The embryonic cell now grows apace
Within the cramped and so secluded space,
Still microscopic it is moved along
*By cilia of the cells it stands among;*
Sometimes however from some mystic causes
The ovum in its onward passage pauses
And grows so big that there it must be nursed
Until it die or tragically burst.
To this condition—one or other side—
Tubal gestation is the term applied.

The author makes no claim that what he writes will merit fame; nor is he proud of this endeavor for in using Zeta his true name he hides forever.

**Pioneer Life in Kentucky 1785-1800.** By Daniel Drake, M.D. Edited, from the Original Manuscript, with Introductory Comments and a Biographical Sketch by Emmet Field Horine, M.D. Cloth. Price, $4. Pp. 257, with illustrations. Henry Schuman, 20 E. 70th St., New York 21, 1948.

The first edition of this book was published in 1870. It has been reprinted once. Its quality as a contribution to medical history is of the highest. With every new bit of information relative to Daniel Drake, his stature rises. He was one of America's greatest pioneer physicians. His two volume work "Principal Diseases of the Interior Valley of North America" is a medical classic. Daniel Drake was the first medical student of Cincinnati. He gave Ohio the name of Buckeye state. He was a professor in several medical schools and the founder of an early medical journal.

**Psychiatry for the Millions.** By Benzion Liber, M.D., Dr.P.H., F.A.P.A., Professor of Psychiatry and Director of the New York Mental Hygiene Clinic at Polyclinic Hospital, New York. Cloth. Price, $2.95. Pp. 307. Frederick Fell, Inc., 386 Fourth Ave., New York 16, 1949.

The blurb for this work asserts that it "discusses every facet of the human mind and the problems that beset it." At present the American market is simply flooded with "don't worry" books. This one is rather technical and certainly suited to the medical rather than the lay reader. Its interest is bolstered by some case reports. Altogether the book is loosely assembled. Many of the cases seem to be much too simply solved. There are 10 or 15 pages of small type indicating how a schizophrenic person thinks—material which cannot be of any real value or perhaps even interest to the average reader.

**The Surgery of the Stomach and Duodenum.** By T. H. Somervell, M.A., M.B.; B.Ch., Surgeon-in-charge, London Mission Hospital, Neyyoor, S. India. Cloth. Price, $11. Pp. 546, with 231 illustrations. Williams & Wilkins Co., Mt. Royal and Guilford Aves., Baltimore 2, 1948.

This book was prompted by the situation of the author in an area where gastric and duodenal lesions are rife. He has worked for over two decades in a mission hospital in South India. He has also thoroughly combed the literature, and quotes liberally from many sources. Whenever the material is from his own clinics, the text is refreshing and interesting. Too often the author buries his observations in the midst of many opinions from other authorities. He does use the figures of others for comparison purposes. Thus, his observations on the incidence of duodenal ulcer in his geographic area are extremely interesting.

Operative technics are more or less standard. Ligation of the vessels to the stomach is strongly advocated as a means of lowering gastric acidity. Such operations have previously been tried and abandoned in Italy and in this country. Nevertheless, 3,373 operations for duodenal ulcer in sixteen years represents a most concentrated and extensive experience. While Mr. Somervell's theories may not be agreeable to all, his observations are keen. Gastroenterologists, both medical and surgical, can profit from this book.

**Studies in Psychosomatic Medicine: An Approach to the Cause and Treatment of Vegetative Disturbances.** By Franz Alexander, M.D., and Thomas Morton French, M.D., with others. Cloth. Price, $7.50. Pp. 568. Ronald Press Company, 15 E. 26th St., New York 10, 1948.

This book represents a collection of papers published by the staff of the Chicago Institute for Psychoanalysis during the past sixteen years, and is based on the psychoanalytic studies of patients suffering from chronic disturbances of the vegetative organs.

With the present emphasis on psychosomatic medicine, a work of this type is especially valuable in correlating the underlying psychogenic disturbance with the somatic manifestation. It further strengthens the opinion that the analytic approach to these problems yields a more fundamental and rational basis than is possible by the ordinary psychotherapeutic measures currently employed. These various studies are classified according to the type of somatic disturbance, and this is of distinct value to anyone interested in a particular symptom or disease. Detailed patient analyses are presented in a readily comprehensive manner. Only occasionally does one find conclusions which do not seem to be wholly justified as determined by the material presented.

This work is especially recommended to internists who are faced with these problems in their every day practice, and it will be found to be a very excellent reference work in managing their patients with psychosomatic disturbances.

**Insect Pests.** By Wm. Clunie Harvey, M.D., D.P.H., F.R.San.I., Medical Officer of Health, Borough of Southgate, and Harry Hill, F.R. San.I., F.S.I.A., A.M.I.S.E., Provincial Milk Advisory Officer, Ministry of Agriculture and Fisheries. Second edition. Cloth. Price, $5. Pp. 347, with 27 illustrations. Paul B. Hoeber, Inc., 49 E. 33rd St., New York 16, 1948.

The bedbug, flea, louse, mosquito, cockroach and other pests which carry disease and are a nuisance to man are discussed in detail in this book. The second edition is even better than the first, with new chapters on mosquitoes and moths and on DDT. Methods for insect control are discussed in full, with educational measures for the public, including leaflets, articles for the press, exhibits, motion pictures and other demonstrations. Chapters on infestation of foodstuffs and human toxicology will be of interest to the physician.

**An Account of the Weather and Diseases of South-Carolina.** By Lionel Chalmers, M.D., Of Charles-Town, South-Carolina. London: Printed for Edward and Charles Dilly, MDCCLXXVI. [Printed through courtesy of *Mead Johnson & Company, Evansville, Indiana.*] Paper. J. I. Waring, M.D., 82 Rutledge Ave., Charleston 37, S. C., [1948].

These extracts from the two volume account by Dr. Chalmers supply a vivid, clearly worded picture of the ideas and practices which constituted American medicine two centuries ago. Nothing quite so sharply emphasizes the remarkable advances made by medical science as does perusal of the well written works of this physician, who was outstanding in his day.

**A Short Practice of Surgery.** Parts I, III, IV. By Hamilton Bailey, F.R.C.S., F.A.C.S., F.I.C.S., Surgeon, Royal Northern Hospital, London, and R. J. McNeill Love, M.S., F.R.C.S, F.A.C.S., Surgeon, Royal Northern, Mildmay Mission and Metropolitan Hospitals, London. With Pathological illustrations by L. C. D. Hermitte, M.B., Ch.B., Pathologist, Royal Infirmary, Sheffield. Eighth edition. Cloth. Price, £2.12.6 per set of five parts. Pp. 224, with 259 illustrations; 421-628, with 303 illustrations; 629-808, with 163 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2; H. K. Lewis & Co., Ltd., 136 Gower St., London, W.C. 1, 1948, 1949.

The eighth edition of this work differs from its predecessors mainly in the fact that it will appear in five small volumes. This is apparently a very popular survey of general surgery, since it has undergone reprintings or revisions in almost every year of its existence.

While advances in surgical treatment have been remarkable, it does seem that most surgical conditions have been adequately described in previous issues. Thus, a comparison of the fifth edition with the present one reveals evidence of rewriting, but the differences are not impressive. Penicillin is acknowledged in the treatment of several infectious conditions. The Murphy drip for proctoclysis could now well be eliminated save for brief mention.

As in previous reviews, the sections now available reveal the same excellent clinical presentation as in earlier editions. There are more illustrations in color. Physicians who are not familiar with Hamilton Bailey's technic of presentation will enjoy making this acquaintance.

**The Ciba Collection of Medical Illustrations: A Compilation of Pathological and Anatomical Paintings.** Prepared by Frank H. Netter, M.D. Cloth. Pp. 222, with 192 illustrations. Ciba Pharmaceutical Products, Inc., Summit, N. J., 1948.

This volume of beautiful, colored anatomic and pathologic illustrations is reminiscent of the famous Spalteholz anatomic drawings, except that much of each of these pages is devoted to concise descriptions of the illustrations. Both types of material are exceptionally well done. Over a period of years, these illustrations have been presented to the medical profession as separate sets of plates in portfolio form. Their popularity led not only to the reprinting of many thousands each year but to the preparation of the present volume containing all of the plates available up through 1948. This work is being continued, and eventually an almost complete atlas of human anatomy and pathology will result. The artist, a graduate of New York University and Bellevue, for a time engaged in private practice. However, his talent for illustration, which became evident in early youth, continued to demand expression throughout his student days, when he illustrated medical books and articles. After an internship, the demand for his illustrations was such he realized that his career lay in this field. During the war he was responsible for illustrating many of the Army training manuals. The carefully written texts which accompany the illustrations were prepared by such well known physicians as Michael de Bakey, Jacob Buckstein, Charles F. Geschickter, Henry H. Ritter, Eli H. Rubin, Samuel A. Vest and the late Reuben A. MacBraer. In sponsoring this work, Ciba Pharmaceutical Products Incorporated has done graduate and undergraduate medical students a good service.

**Volumetric Analysis. Volume II: Titration Methods: Acid-Base, Precipitation, and Complex-Formation Reactions.** By I. M. Kolthoff, Professor and Head, Division of Analytical Chemistry, University of Minnesota, Minneapolis, and V. A. Stenger, Analytical Research Chemist The Dow Chemical Company, Midland, Michigan. Second edition. Cloth. Price, $6. Pp. 374, with 14 illustrations. Interscience Publishers, Inc., 215 Fourth Ave., New York 3, 1947.

The contents of this book are based on a German monograph published first in 1928 by the senior author. It has been brought up to date by a careful screening of many methods and only the more reliable procedures are included. Evaluation of the precision of the experiments is given. The book deals with acid-base, quantitative precipitation and complex-formation reactions. The arrangement of the methods is determined by the type of reaction involved and not by the field in which it may be applied, although directions are given for the analysis of many substances which are found in the industrial, pharmaceutic and agricultural fields.

**Post-Mortem Appearances.** By Joan M. Ross, M.D., B.S., M.R.C.S., Advisor in Pathology to the Ministry of Supply, London. Oxford Medical Publications. Fifth edition. Fabrikoid. Price, $2.75. Pp. 308. Oxford University Press, 114 Fifth Ave., New York 11; Amen House, Warwick Sq., London, E.C. 4, 1948.

This little book, of convenient pocket size, was designed to describe gross anatomic changes seen at necropsy which help to characterize the main pathologic conditions. In addition to a brief description of necropsy methods, sections are devoted to the general findings to be expected in the presence of metabolic and deficiency diseases, infections and diseases of specific organs. A useful section deals with problems of stillbirths and neonatal deaths. In the appendixes weights and measurements of organs, dates of ossification and principal bones and states of maturity of the fetus are useful additions. It was hoped by the author that the book would be of aid to physicians who may have to perform an occasional necropsy, as well as to beginning students who wish to specialize in pathology. This little book may well serve a useful purpose in every morgue as a convenient and inexpensive reference source.

**The Mentally Ill in America: A History of Their Care and Treatment from Colonial Times.** By Albert Deutsch. Second edition. Cloth. Price, $5.50. Pp. 555, with illustrations. Columbia University Press, 2960 Broadway, New York 27; Oxford University Press, Amen House, Warwick Sq., London, E.C. 4, 1949.

Before he became a columnist for *PM* and more recently the New York *Post*, Mr. Deutsch was trained in medical history under Sigerist and wrote more particularly in the field of history of psychiatry. The latest edition of his book traces the evolution of psychologic medicine and provides new chapters on psychosomatic aspects of physical disease and the national mental health act. The quality of the work has been recognized by leaders in psychiatry, and indeed it is hard to reconcile the scientific approach to medical problems of this book with most of what Mr. Deutsch writes on other aspects of medical care.

**Your Child or Mine: The Story of the Cerebral-Palsied Child.** By Mary Louise Hart Burton. In collaboration with Sage Holter Jennings. Cloth. Price, $1.25. Pp. 64, with illustrations. Coward-McCann, Inc., 2 W. 45th St., New York 19, 1949.

This booklet consists of six well written case reports of children with cerbral palsy. The work is simply and clearly written and describes realistically some of the problems which are encountered in the management of these chlidren. It is primarily intended for parents and laymen who might want to know how a child with cerebral palsy acts and looks. The book is well printed and illustrated with good photographs. A bibliography and a list of cerebral palsy associations and clinics are appended and woud greatly enhance the value of the book if they were more comprehensive. The book can be recommended as interesting reading for laymen and parents of children with cerebral palsy.

**Which Way Out: Stories Based on the Experience of a Psychiatrist.** By C. P. Oberndorf, M.D. Cloth. Price, $3.25. Pp. 236. International Universities Press, Inc., 227 West 13th St., New York 11, 1948.

The case books of psychoanalysts are full of drama. Dr. Oberndorf, who is clinical professor of psychiatry at Columbia University, has a skill in dramatic writing well above that of the average scientist. One can gain at least a smattering of modern psychoanalytic approaches to mental problems in these stories. For the layman they are better than most of the interpretative writing on the subject by doctors or professional scientific writers. Apparently none of these stories has previously been published elsewhere.

**"Miss U."** By Margaret Utinsky. Cloth. Price, $3. Pp. 172, with illustrations by G. G. Estill. Naylor Company, 918 N. St. Mary's St., San Antonio 6, 1948.

"This is the story of the heroism of Margaret Utinsky, who, against unbelievable and fantastic odds, for three years led an underground organization in the Philippines in a relentless and telling effort to aid American prisoners of war held by the Japanese." It is no work of art, but it is marked by sincerity. Doctors, colonels and sergeants testify to her courage and sympathy.

# Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

## DIET FOR ATHEROSCLEROSIS

**To the Editor:—A tall thin man, age 43, had his gallbladder removed five months ago. It contained several large cholesterol stones. Recovery was uneventful; six weeks ago he suffered his first attack of coronary occlusion with infarction. He does not have hypertension. How strict a low fat diet for atherosclerosis should I prescribe? Should meat and whole milk be omitted? What is the exact dosage of choline and of inositol that will be definitely decholesterolizing? What precautions should be observed in taking these drugs over long periods? M.D., Kansas.**

Answer.—Since the blood cholesterol level in most cases of familial hypercholesterolemia does not fall on dietary restriction, on administration of lipotropic agents such as lecithin, inositol, choline, methionine or on high protein diets, it is impossible to describe a regimen which can be guaranteed to alter the pace of atherosclerosis or be "definitely decholesterolizing." When a man of 43 has such a history, it is probable that his blood cholesterol is high; if his diet has been rich in eggs, butter and cream, all these items, as well as liver, brain, kidney, sweetbreads, whole milk and cheeses made from whole milk, should be omitted. Meat should be cut down to 5 or 6 ounces daily. If, after two months, blood cholesterol has not fallen to 200 mg. per hundred cubic centimeters, or less, the effect of a pure vegetarian diet, which is cholesterol free, could be determined, or choline, lecithin and inositol could be given in doses similar to those used as adjuncts in treating hepatic cirrhosis. If the basal metabolism is minus 20 per cent or lower, thyroid extract should be given, beginning with ⅛ grain (8 mg.) daily for two weeks, and doubling the dose each two weeks until the basal rate is normal or unpleasant symptoms appear. The highest tolerated dose may be continued indefinitely if the blood cholesterol falls. Diet has little effect on the hypercholesterolemia of hypothyroidism.

## TREATMENT OF UREMIA

**To the Editor:—What are the new treatments for uremia occurring in chronic nephritis? Is 50 cc. of 50 per cent dextrose intravenously of value for uremia? Harry R. Deane, M.D., St. Petersburg, Fla.**

Answer.—Treatment of uremia due to chronic nephritis is still based on the general principle that this syndrome is the complex resultant of a variety of disturbances, including azotemia, acidosis and other electrolyte imbalance (hypocalcemia, hypochloremia, hyperpotassemia or hypopotassemia), dehydration, anemia, hypertensive encephalopathy, gastrointestinal and serous membrane inflammation, cardiac failure, cutaneous irritation and central nervous depression. Under these circumstances there is not any single all-embracing treatment for uremia. Rather is it symptomatic, varying with the individual symptoms and signs.

The major therapeutic measures, therefore, consist of (1) adequate fluid intake, parenteral if necessary, to produce a urinary output of at least 1,500 cc. daily; (2) correction of electrolyte imbalance or deficiency by frequent estimation of serum levels; (3) correction of acidosis by the proper use of sixth-molar sodium lactate solution; (4) restriction of protein in diet, or as amino acids or human serum albumin parenterally to the minimum, about 0.5 Gm. per kilogram of body weight, with use of carbohydrate to furnish calories; (5) intravenous injections of human serum albumin in patients with hypoalbuminemia and intolerance for food to tide them over short periods of malnutrition; (6) cautious transfusions of 250 cc. of packed erythrocytes or whole blood, after careful cross matching whenever hemoglobin level falls below 60 or 70 per cent; (7) use of sedatives best tolerated by the patient and least likely to cause cutaneous eruption; (8) digitalization for cardiac failure, preferably with the drug less likely to accumulate and confuse the clinical picture in regard to nausea or vomiting, and (9) avoidance of any food, drug, laxative or strong enema capable of irritating the gastrointestinal tract.

The value of 50 per cent dextrose solution intravenously is largely caloric, apart from temporary circulatory stimulation. The resultant thrombosis of veins is a serious disadvantage.

## DIAGNOSIS OF ULCER

**To the Editor:—The patient is a white man, aged 26; he is 6 feet (182.9 cm.) tall and weighs 212 pounds (96.1 Kg.). Since the age of 12 he has suffered recurrently from peptic ulcer. To his knowledge, there has never been hemorrhage or perforation. I first saw him one week ago; present symptoms are the same as recurred with each "attack" of ulcer. They are (1) severe "heartburn" constant in the epigastrium; (2) a sense of great fulness in the chest and the upper part of the abdomen, and (3) moderate diarrhea (five to six stools a day). These symptoms have been persistent for several months; he has visited several physicians, has used bismuth subcarbonate, aluminum hydroxide, mucin and magnesium compound. Relief is obtained only when he eats "huge quantities" of food every hour and takes 2 to 3 tablespoons of bismuth subcarbonate or sodium bicarbonate every fifteen to twenty minutes. Roentgen observations are as follows: "The stomach is abnormally high, is twisted on its longitudinal axis and is partly inverted so that the pars media is high in the mid-epigastrium and the lower third of the stomach is higher than the duodenum. The fundus is constantly distended with an unusually large amount of air. There is considerable irregularity of the rugae throughout the stomach; however, a true intrinsic lesion is not demonstrable. The pyloric valve is almost completely patent, and the stomach empties with extreme rapidity into the small intestine. The bulb of the duodenum shows a constant defect in the lesser curvature, apparently a nonobstructive duodenal ulcer." In a telephone conversation, the radiologist told me that the usual amount of barium sulfate given had left the stomach before he made the fluoroscopic examination, and he expressed the opinion that the remarkably rapid emptying time was probably responsible for the symptoms and could be due to the ulcer or possible hypertrophic gastritis or endocrine disturbances. The patient told me that he passed all the barium sulfate per rectum within three hours of its administration. I would appreciate your suggestions as to therapy. M.D., New York.**

Answer.—This is a puzzling problem. Epigastric burning, especially when constant, is practically always a paresthesia in the skin and is not due to an ulcer. It is hard to explain the sense of fulness in the chest and upper part of the abdomen. The diarrhea could be understandable on the basis of an extremely rapid passage of material through the stomach and bowel.

The relief of pain from eating huge quantities of food every hour suggests either the presence of a poorly controlled ulcer or bulimia due to a minor psychosis. The taking of large amounts of sodium bicarbonate may have something to do with keeping up the diarrhea.

The peculiar appearance of the stomach suggests a partial rotation, but this is a rare condition. It suggests also a cyst of the pancreas or some lesion which is pushing the stomach upward. If present, such a mass should be felt on palpation. The great distention of the upper part of the stomach with air is rare. It seems usually to be due to some peculiarity which enables the patient to swallow large amounts of air with his drink. The best treatment for this is to teach the patient to put down a tube after each meal so as to let the air out. Then it does not have to go through the bowel. This is particularly advisable after the last meal in the evening. It may enable the patient to sleep. Such intubation cannot do harm.

It is conceivable that the rapid emptying of the stomach is due to its having been made highly irritable by the presence of an ulcer in the duodenum. It is rare, however, to see such rapid emptying.

It would be interesting to know whether the patient is highly neurotic or somewhat psychotic person with tremendously increased reflexes. It would be interesting to know whether he feels the distress of impending diarrhea the minute he eats. In some of these cases the sweat breaks out and the patient suffers from a "dumping syndrome." Often in these cases the knee jerks are tremendously exaggerated, and the patient will bloat within a few minutes after taking a glass of cold water.

The unfortunate thing is that drugs have not been found that will slow the progress of material through the small bowel. Even opium is likely only to cause spasm in the terminal ileum. Physostigmine salicylate, pilocarpine and neostigmine are not likely to do any good. The trouble is that, in an animal, in order to make a bowel as sensitive and irritable as this, one has to cut the extrinsic nerves.

Charcoal when wet does not absorb gas. Betanaphthol used to be given with the idea of killing off bacteria in the bowel and thus stopping fermentation, but it does not do this to any great extent. If one wants to kill bacteria in the bowel one should use drugs like phthalylsulfathiazole and succinylsulfathiazole. They kill bacteria and cut down flatulence.

No mention is made about the intractability of ulcer pain. If this person's syndrome is due to an acute ulcer or an ulcer penetrating into the head of the pancreas, one would expect him to be suffering much pain. If he is not, one possibility is that he is an insensitive type of person whom a dentist cannot hurt. If this be true, one would suspect the more that he has a highly irritating type of posterior penetrating ulcer. The decision whether or not to operate depends largely on the character of the patient's nervous system. If he is somewhat psychotic an operation should be put off as long as possible. If, however, before this syndrome appeared he was a normal, hard-working, sensible, happy man, surgical exploration would be justifiable. If he operates, the surgeon must feel back of the duodenum or he may easily miss the perforation and may report absence of ulcer.

## PUFFINESS UNDER EYES IN CHILDREN

*To the Editor:*—A number of children practically all under the age of 8 are moderately underweight and moderately anemic; the face is somewhat puffed, mostly around the eyes; pitting edema is absent; the skin color is pasty; renal function and bowel function are satisfactory; appetite is poor and the children are "picky"; weight and height remain some below average, and one has the feeling that the child should be a little heavier and taller, as judged by his parents and the other children in the family. In some I found an allergic background. Specimens of urine are normal and dilution-concentration tests reveal values within normal limits; urinary calcium is present. Blood cell counts show moderate anemia of the secondary type. Report of stool examination is negative. Roentgenograms of bones do not reveal pathologic changes. The children's spirit is satisfactory, as are their school records. Susceptibility to respiratory infections is increased; styes are more frequent than in the average. Scratch tests and elimination diets are unsuccessful. In cases in which urinary calcium was absent, an oral calcium preparation was given; urinary calcium appeared but the general picture remained unchanged. Vitamin-liver-iron preparations caused slight increase in appetite. Thyroid in guarded doses does not have any influence. Ultraviolet irradiation provided a tonic effect, but the puffiness did not disappear. Please suggest further treatment.

M.D., New York.

Answer.—The clinical picture presented involves children under 8 years of age who are moderately underweight, moderately anemic, with sallow skin, slight anorexia and, finally, with puffiness under the eyes. It is noted that susceptibility to respiratory infections is increased. Except for moderate anemia, the various laboratory procedures are negative. Therapy has been unsatisfactory.

In the diagnosis of this group of children, whose main symptom is a puffiness of the face particularly around the eyes, there are a number of considerations which might be of aid. One might ask whether this puffiness is hereditary, and whether other members of the family evidence the same symptom. This type of puffiness, of course, would not be outgrown.

While the author of this inquiry may be describing a new clinical entity, it is more probable that the puffiness noted in children in this age group is due to respiratory infections and secondary anemia. These children outgrow this condition. It is a common observation that some small children, particularly those from 3 to 8 years of age, seem to suffer an interminable number of respiratory infections, particularly during the winter months while they are at school. These infections produce a secondary anemia of a moderate nature, and a constant inflammation of the throat and nasal passages make their faces appear puffy under the eyes. At about 8 years of age or thereafter, these children seem to acquire an increased immunity or resistance; they have less frequent respiratory infections and outgrow puffiness of the face.

That the spirit of the children is satisfactory, as are their school records, is an important differential point, for were there any severe systemic illness causing the puffiness of the face as described, the children would act chronically ill and their school records would suffer.

Further diagnostic measures do not seem to be called for, as the condition is self limited.

As to treatment, any measure that would increase the general resistance, such as adequate balanced diet, with particular emphasis on food stuffs containing protein and iron, would be indicated. The added vitamin, liver and iron preparations should be of adequate potency and should be given for sufficiently long periods. As long as infection persists it is difficult to overcome secondary anemia. Depending on the local condition in the nose and throat, a course of oral penicillin might be indicated to clear up persistent infection. In some cases chronically infected tonsils and adenoids may have to be removed. The chronicity of the tonsillar infection may often be judged by the persistence of cervical glands at the angle of the jaw. Occasionally the use of a respiratory vaccine may increase resistance so that the cycle of repeated infection is broken for a period at least. The action of such a vaccine is probably of a general immunologic or nonspecific type.

## ULCER TREATMENT WITH CABBAGE JUICE

*To the Editor:*—A patient suffering from a long-standing (chronic) duodenal ulcer recently noticed this newspaper article: *New York Times*, January 13, 1949, "Cabbage Juice for Ulcers," original work done by Dr. Garnett Cheney of the Stanford Medical School. Please enlighten me as to the value of this treatment.

Walter H. Siegel, M.D., Mineola, N. Y.

Answer.—Cheney (Cheney, G.: *Calif. Med.* **70**: 10-15, 1949) treated 13 patients, giving them at least 1 liter of fresh uncooked cabbage juice a day. The reason for giving this was that in guinea pigs cabbage appeared to prevent the formation of ulcers due to histamine.

Cabbages were put in a juice press, and usually it took 2 Kg. of the raw vegetable to produce 1 liter of juice. The addition of celery juice made the cabbage juice more palatable. The last 3 patients treated were given a mixture of three parts of cabbage juice to one of celery juice. Salt and pepper and tomato juice should also be added. One in 3 of the patients had some abdominal distress and constipation, relieved by milk of magnesia. The juice was given 200 cc. at a time, five times a day. It was unpalatable if kept overnight.

In addition to the cabbage and celery juice a diet was given in which all of the food was cooked so as to destroy other sources of the supposed vitamin U.

The patients were kept in bed until pain stopped. They were allowed to smoke. They were given sodium bicarbonate and codein sulfate for the relief of pain, also sleep makers at bedtime, and milk of magnesia to relieve constipation.

Cheney depended much on the roentgenologists to tell him when the ulcer was healed and claimed that craters disappeared rapidly, often within two weeks. Many gastroenterologists would not care to trust to this method or this criterion of ulcer healing. There were six gastric ulcers and one jejunal ulcer, all of which were seen with the gastroscope to heal rapidly. Cheney stated that the "'anti-ulcer factor' is readily destroyed by heat." Wisely he pointed out that the results are as yet only suggestive, and more work must be done.

Since November 1948, a concentrate of cabbage fat prepared by Viobin Corporation of Monticello, Ill., has protected guinea pigs from histamin-produced ulcers, when fed in doses of 100 mg. a day for a 300 Gm. animal.

Naturally, the big question will be, whether the healed ulcers will stay healed any longer after this treatment than after other treatments.

## ACTION OF PROCAINE ON SULFONAMIDE COMPOUNDS

*To the Editor:*—(1) At a staff meeting it was said that the procaine which is part of procaine-penicillin inactivates sulfonamide compounds; it was said that 1 part procaine would inactivate about 1,000 parts of sulfonamide compound (any?). Is that correct? If so does it hold true for any form of procaine, e. g., for local or spinal anesthetic? (2) Several companies claim that their penicillin preparation in oil, with aluminum monostearate added, will produce blood levels of therapeutic consequence for periods much longer than twenty-four hours. What is the official opinion in this matter?

R. J. Kent, M.D., Savannah, N. Y.

Answer.—(1) Theoretically, the procaine in a procaine-penicillin combination might prevent action of sulfonamide compounds, but the effect would be slight. The mechanism is as follows: Procaine is slowly liberated from penicillin in the body by hydrolysis in the form of procaine base. The procaine molecule then splits into two parts, one of which is triethanolamine and the other para-aminobenzoic acid. The latter has been shown to have an antagonistic effect against sulfonamide compounds. The relative extent of this effect is determined by the concentration and distribution of procaine and its degradation products. A dose of 300,000 units of crystalline penicillin G-procaine contains about 119 mg. of procaine base. Blood levels indicate that hydrolysis of the salt requires at least twenty-four hours. Further time is needed for the enzymatic splitting of the procaine. The para-aminobenzoic acid would be generally distributed in the body for twenty-four hours or more, and the competitive effect against sulfonamide compounds would be small. Procaine from other sources would act the same, but the effect would be dependent on usage and concentration.

(2) The addition of aluminum monostearate to procaine penicillin in oil has been shown to prolong the duration of assayable blood levels of penicillin. Robinson and associates have shown that intramuscular doses of 300,000 units result in assayable levels (0.03 unit per cubic centimeter, or more; formerly called "therapeutic blood level") in all patients at 120 hours. There were high levels at 24 to 96 hours, and 42 per cent had assayable levels at 144 hours.

The "official" aspect is also definite, since the Food and Drug Administration requires the manufacturer of antibiotics to provide protocols for any claims for a product which gives assayable blood levels up to 96 hours. There can be some variation, however, due to such factors as complete bed rest (ambulation hastens absorption) and methods of assay.

## TOXICITY OF MERCURY COMPOUNDS

**To the Editor:**—What is the toxicity of phenylmercuric borate? A dentist and a dental technician both consulted me at about the same time regarding epigastric pain, lethargy, easy fatigue and pallor. Both had a moderate secondary anemia and tenderness to pressure over the liver margins. They were using a cold sterilizing solution containing the named chemical. Both have improved since discontinuing its use. Is there any test delicate enough to show mercury in the blood?

Thomas S. White, M.D., Millbrook, N. Y.

Answer.—The toxicity of phenylmercuric nitrate and phenylmercuric chloride has been studied by Weed and Eckert (*J. Infect. Dis.* 52: 354, 1933). They administered the compounds orally to mice, rats and guinea pigs, intraperitoneally to mice and rats and subcutaneously to rabbits. They found that despite the high bactericidal action of these salts, they were relatively nontoxic when given orally, intraperitoneally or subcutaneously.

Isotonic phenylmercuric chloride was used to irrigate the bladders of rabbits, and it was found to give less inflammatory reaction than did saline solution. A lethal dose of phenylmercuric nitrate given intravenously produced acute nephrosis.

Phenylmercuric borate has been used by M. Baer for the treatment of 50 patients with otorhinolaryngological infections who observed no disturbance due to absorption of the compound, or subjective residue. (*Schweiz. med. Wchnschr.* 69: 850, 1939.)

A. Fehr has used phenylmercuric borate as an antiseptic in surgery on 500 patients, and he found that it had a lower toxicity and a higher bacterial action than other preparations with which he compared it. (*Schweiz. med. Wchnschr.* 70: 1221, 1940.)

With regard to the determination of mercury in cases of suspected chronic poisoning, analyses are usually made on the urine, since this is the route of excretion of the metal from the body. A procedure for the determination may be found in "Colorimetric Determination of Traces of Metals" by E. B. Sandell, New York (Interscience Publishers, Inc., 1944) and other similar textbooks.

## TOXIC EFFECTS OF PROCAINE

**To the Editor:**—A girl, aged 19, is hypersensitive to procaine. At age 5, for extraction of a deciduous tooth, a small amount of dental procaine hydrochloride solution (with epinephrine) was injected in the gum, about 1 or 2 minims (0.06 to 0.13 cc.) A few minutes later the child became pale, perspired and was apparently in mild shock. She recovered in a few minutes. At age 12 dental procaine hydrochloride solution was used for nerve block, and in a few minutes the girl was in severe shock, without apparent pulse. Artificial respiration, cardiac stimulants and head down position resulted in recovery. Can anything be done to desensitize this girl, and if increaesd tolerance is developed will it be of long duration?

M.D., Virginia.

Answer.—The symptoms described are not attributable to a procaine allergy. The explanation for the reaction is probably one of the following: (1) a low tolerance for the toxic effects of procaine; (2) a low tolerance for epinephrine, or (3) a psychic effect. The literature does not clarify the status of the activity or toxicity of the procaine in its combination with penicillin. Desensitization to procaine is not an established procedure, and if it were possible the duration of tolerance would probably be short. In this particular instance, since there is no real evidence of an allergy, a desensitization program would definitely not be indicated.

## EFFECT OF STREPTOMYCIN ON THE FETUS

**To the Editor:**—Please evaluate the toxicity of streptomycin on the fetus, when administered to a pregnant woman.

Charles L. Galt Jr., M.D., Carlsbad, N. M.

Answer.—Watson and Stow (The Journal, Aug. 28, 1948, page 1599) observed 2 infants whose mothers had received streptomycin in dosage of 2 Gm. daily for ninety-five and ninety days, respectively, the administration starting in each instance in the second trimester of pregnancy. These infants, observed for nine months and one year, respectively, were normal at birth, developed normally and had normal hearing. Watson and Stow considered that streptomycin might be dangerous if administered during the first trimester of pregnancy, owing to the sensitivity of fetal structures in the anlage stage during that period. Other experiences have not been found.

## TURPENTINES AND DERMATITIS

**To the Editor:**—Recently four house painters have had contact dermatitis which they blame on a "wood turpentine." Is this different from the "gum turpentine" which they used previously?

Shepard G. Aronson, M.D., New York.

Answer.—Until about thirty-five years ago the only turpentine available was "gum spirits turpentine." This substance, which is still produced in large quantities, derives from the distillation of the gum exuded from living pine trees after slashing. This form of turpentine is responsible for some dermatitis, particularly if old, and may induce systemic effects if inhaled or ingested in significant quantities. At about the time mentioned, two new forms of turpentine appeared, the "steam-distilled" and the "destructively distilled" wood turpentines. These different varieties are obtained chiefly from stumps in cutover areas after reduction to chip size. Of these two forms, the "steam distilled" may be the more prolific source of dermatitis, but, undoubtedly, the details of process differ from plant to plant, so that neither sort may be praised or condemned as a generality. Still later, a fourth form of turpentine appeared. This is prepared by extraction of chipped dead pine wood by such solvents as naphtha followed by distillation to recover the naphtha and remove the heavier residues. All of these turpentines have wide and somewhat similar fields of industrial application. All have been associated with the causation of some dermatitis among those exposed.

## DISCOID LUPUS ERYTHEMATOSUS

**To the Editor:**—A 41 year old electric welder has two patches of discoid lupus erythematosus on the bridge of the nose and on the right cheek of nine months' duration. He intends to bring a claim against his employer, assuming that the dermatosis is occupational in origin. He wears a shield when working. Without doubt he is exposed to some ultra-violet radiation from the welding arcs of his fellow workers. In the circumstances outlined can lupus erythematosus be considered a compensable disease?

Walter Weinberger, M.D., Juniata, Pa.

Answer.—Many believe that lupus erythematosus disseminatus of the acute or toxic form may be partially based on hypersensitivity or at least undue exposure to ultraviolet rays. The course of development in some cases suggests this, and in some cases in which the condition eventuated from the discoid variety the patients gave histories of having been sunburned. Nevertheless, in some experiments it was shown that test areas of skin were not more sensitive than the skin of normal controls to ultraviolet rays or other parts of the light spectrum. While there is some suggestive evidence that light may act as a trigger mechanism to the induction of the acute variety, this does not seem to be the cause of the chronic or discoid type. The patient undoubtedly has been exposed to sunlight as well as rays from the welding arc. How are we to allocate the influence from each source if any? The overwhelming majority of experts would say that this man's discoid lupus erythematosus is not a compensable disease.

## CANCER OF CERVIX IN JEWS AND NON-JEWS

**To the Editor:**—Is there any difference in the incidence of carcinoma of the cervix in Jewish and gentile women? Does circumcision of the male influence the production of cervical carcinoma in a manner analogous to its influence in carcinoma of the glans penis? The only conceivable relation would be that a carcinogenic agent is present in the smegma of the uncircumcised male.

M. D., New York.

Answer.—Drs. Treusch, Hunt and Rousuck, in an analysis of 568 consecutive cases of carcinoma of the cervix diagnosed at the Mayo Clinic in the years 1938 to 1942 inclusive (*Am. J. Obst. & Gynec.* 52: 162 [July] 1946), noted that in 566 instances the expressed religious preference of the patient was specifically given as other than Jewish and in not a single instance was the religious preference stated as being Jewish. In 2 instances it was impossible to classify the patients definitely as Jewish or non-Jewish, since the religious preference was given by the patient as none or no preference. However, the authors said that it can be definitely stated that it did not appear at all likely from the other available data that either of these 2 patients was Jewish. They also stated that the estimated Jewish registration at the Mayo Clinic is approximately 7 to 8 per cent and that, according to the "World Almanac" for 1945, about 4 per cent of persons in the United States are Jewish. By using the basis of 7 per cent registration of Jewish patients, they stated that one would have expected to find approximately 40 Jewish women in their series.

According to Dr. Joseph Berkson, Chief of the Department of Biometry and Medical Statistics at the Mayo Clinic, we have no knowledge of the relative incidence of carcinoma of the cervix among Jewish and gentile women as far as the general population is concerned; studies made in selected populations such as medical clinics indicate a smaller incidence in Jewish women, but, in view of the special character of these populations, this conclusion must be looked on with caution, and the possible relation of circumcision in the male to carcinoma of the cervix is not known.

Apparently, there is no available information with respect to the presence of a carcinogenic agent in smegma that is supported by experimental evidence.

## FECAL IMPACTION

*To the Editor:*—Is there a more satisfactory method than manual removal of pasty stools which remain in the rectum of bedfast patients? Oil emulsions by mouth and warm oil or soap enemas seem valueless. Sometimes the finger cannot reach or entirely remove the stool.

M.D., Oregon.

Answer.—The following measures have been found helpful in the removal of fecal impactions and the control of conditions such as that which is described. Warm saline irrigations given every two to three days with the patient in the knee-chest position will suffice in milder cases. The instillation of warm liquid petrolatum, 1 to 3 ounces at a time, at bedtime is helpful. The instillation of a weak peroxide solution helps to break up the fecal mass. This is prepared by adding one part of peroxide to three or four parts of warm water. It should never be stronger than that because of the possibility of a so-called peroxide proctitis. In spite of these measures, it may still be necessary to have the mass broken up manually.

## PARENT BLOOD IN MEASLES MODIFICATION

*To the Editor:*—I have been using human immune serum globulin for modification of measles and have wondered whether it is possible to express its equivalent in cubic centimeters of human blood taken from a middle-aged person who has had measles at some time during childhood. Often for various reasons the use of blood from the respective mother and father will be much more convenient, cheaper and as effective. I use 40 to 60 cc. Is a blood test for syphilis of the donor (a parent) obligatory under the law except where an emergency exists?

R. J. Kent, M.D., Savannah, N. Y.

Answer.—When citrated whole blood drawn from adults who have not recently had measles is used for measles prophylaxis 30 to 60 cc. is thought to have about the same protective value as 2 to 5 cc. of human immune serum globulin. Because the latter is made from pooled lots of serum, its antibody content is more certain than blood from a single donor.

The variables in deciding on the exact dosage are (1) the interval since exposure, (2) the age of the subject being protected and (3) the objective of the procedure, that is, whether complete protection or merely modification of the attack is sought. If the protective substances are given between the fifth and the ninth day after exposure, the majority of subjects will contract modified measles and thus gain permanent immunity. Unless recognizable measles—even though mild—results, a solid immunity cannot be counted on. The passive immunity conferred by the whole blood or immune globulin cannot be relied on to endure longer than a month. Hence the procedure should be repeated if another exposure occurs after this time. A blanket statement regarding the legal requirement for making a blood test for syphilis on parent donors cannot be made because state and local laws vary on this point.

## AMBULANT TREATMENT OF BRUCELLOSIS

*To the Editor:*—1. What is the best way to treat a male patient for Malta fever of about two years' duration? 2. His present complaints are decreasing in severity and the question has been asked as to the percentage of cases that are eventually self limited. 3. Because of the patient's location in Palestine, hospitalization may be impossible. Could you suggest an alternative treatment that could be carried out at home with a minimum of laboratory work?

Morris F. H. Levy, M.D., Brooklyn.

Answer.—The proportion of patients at this stage that might recover satisfactorily without treatment is unpredictable, owing largely to the propensity of the disease to relapse. Since patients can have more or less continuous symptoms for fifteen to twenty-five years, it is advisable to recommend some form of treatment. A simplified form of the treatment recommended and used by Griggs, The Journal, April 3, 1948, page 911, would be as useful as any and less harmful than most, and would not require hospitalization. Any physician skilled in the management of antigen therapy for hay fever should be able to use it successfully.

## KAHN VERIFICATION TEST

*To the Editor:*—The answer to the inquiry on the "Kahn Verification Test" in The Journal, Nov. 6, 1948, page 789, did not contain the basic fact that the verification test was not applicable to the patient in question. As is evident from the enclosed report blank: "The verification test is applicable to cases in which clinical and epidemiologic studies point to false positive reactions." The patient under consideration showed clinical indications of syphilis with a record of seropositivity extending from 1946 to 1948 and with a drop in Kahn units from 20 to 2 or 3 following antisyphilitic therapy.

The verification test was not published as a method for differentiating true and false positive reactions without restriction. If such a method were available, it would replace serodiagnostic tests. The verification test was published (A Serologic Verification Test in the Diagnosis of Latent Syphilis, *Arch. Dermat. & Syph.* **41**: 817, 1940) as a laboratory aid in the establishment of a differential diagnosis between seropositive persons with latent syphilis and persons with false positive reactions in cases in which clinical indications of syphilis do not exist. The value and limitations of the verification test will be discussed in a forthcoming article.

Reuben L. Kahn, Sc.D., Ann Arbor, Mich.

*To the Editor:*—I have read with interest the inquiry of Dr. C. W. Atherton of Fairview, Ill., and the answer printed on page 789 of The Journal, Nov. 6, 1948.

This interchange appears to resurrect again the basic nature of any and all laboratory test routines and findings. While the practicing physician and surgeon yearns for something of laboratory origin which will absolutely provide him with an incontrovertible diagnosis, especially in a case which is confusing, it is a fact that any and all such procedures are but endeavors to contribute additional objective signs in the patient, elicited by special means. The diagnosis in any case is to be made by careful consideration and evaluation of all objective and subjective signs and symptoms of the patient.

It seems to me that such a basic concept has not been sufficiently stressed. He is indeed a wise pathologist who maintains that his function is not to supplant the clinician but to aid him in his determinations by as careful and accurately performed and as well chosen test routines as the problem presented shall justify. Most of the frictions which I have witnessed between laboratory men and clinicians have, in fact, stemmed from the failure of one or the other to recognize the true nature and purport of procedures in clinical pathology and serology.

Whether it be on the positive or the negative side, none of these procedures can be taken as constituting an absolute and final disposition of the diagnostic problem in hand. Two decades ago I published an article on Wassermann-negative syphilis in the *Military Surgeon* (63: 167-181 [Aug.] 1928), in which were quoted the stated opinions of several noted serologists and syphilologists. I do not believe that the basic concept as to the role of laboratory findings has changed one iota in the intervening years.

Albert Hulett, M.D., East Orange, N. J.

## AMPHETAMINE SULFATE PREPARATIONS

*To the Editor:*—In The Journal, February 5, page 422, is a question about amphetamine sulfate and possible harmful doses. You state that toxic symptoms have been noted with as low a dose as 5 mg. and that 15 mg. is the usual maximum dosage.

You might be interested in the case of a young woman who entered our sanatorium not long ago, who had been taking 250 mg. daily or every other day for about two weeks. Not being able to get it on prescription she was buying inhalers, removing the paper impregnated with the drug and steeping it like tea. She was taking it for the "lift" to help her in an anxiety state which was due to a home conflict.

When she came in she was not hallucinating but she was "high." There was an irregular, occasional twitch sometimes of the hands, legs or face. She was perfectly coherent and oriented, but her speech was rather uninhibited. This latter may have been due to a tendency to try to shock members of the family with whom she was not in good rapport. She was definitely euphoric and expansive, laughed freely but only in response to normal situations of humor. She had lost a great deal of weight. There was a slight elevation of the blood pressure, and her reflexes were all highly exaggerated. There were no abnormal reflexes. She gave sixty-three responses in the Rohrschach test; her reaction time was fast. There were practically no sexual responses (her sexual situation is well adjusted), and she found much more than average interest in the colored plates. Many of her responses were highly imaginative, but she could explain her deductions logically. She apparently did not have particular dream patterns of importance, but she stated positively that even before taking the amphetamine she had usually dreamed in technicolor, of brilliant flashes of light and gorgeous buildings in splendid colors. She stated that she had neved used marijuana.

The drug was stopped completely and she almost immediately went into a profound sleep for about forty-eight hours. After four days she was back to average sleep routine. On awaking she was hungry and ate well. Complications of constipation or diarrhea did not occur. When she left, after a ten days' stay, her husband stated that she seemed entirely normal except for weakness due to loss of weight. She did not have desire for the drug at any time that she was with us.

Correspondence with the manufacturer of the inhaler gave us the dosage per unit (250 mg.). The paper impregnated with the drug is plainly marked with a warning about internal use. It is possible that she did not get the full dosage with each one used, but even if she took one every other day she was still getting an enormous dose. Her husband stated that at a minimum she must have used nine in the fortnight previous to her admission.

This experience would tend to show that there must be an enormous difference in individual reaction to amphetamine sulfate and that habituation does not depend on the amount taken as much as on the period over which it is used and the will power of the user to break off the habit.

Hugh M. Hart, M.D., New Wilmington, Pa.

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# THROMBOPENIA AND INCREASED CAPILLARY FRAGILITY IN HEPATIC DISEASE

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and
ALBERT M. SNELL, M.D.
Rochester, Minn.

Despite the fact that the hemorrhagic state existing in hepatic disease has been known for several centuries, no entirely satisfactory explanation for it had been advanced until the demonstration of a prothrombin defect in 1935 by Quick and others.[1] While hypoprothrombinemia bears unquestioned responsibility for the hemorrhagic tendency in obstructive jaundice, many students of the subject are unwilling to assign it the sole responsibility for all the instances of bleeding encountered in parenchymal disease of the liver. This has led to an extensive search for other factors associated with hepatic disease which may affect coagulability of the blood. Recently, emphasis has been placed on the demonstration of a circulating anticoagulant, presumed to be heparin. Its place in the hemorrhagic phenomena associated with hepatic disease as yet remains obscure.

It is the purpose of this presentation to emphasize two neglected factors which may be associated with coagulation defects in hepatic disease, namely, thrombopenia and increased capillary fragility. An investigation of the incidence and possible significance of these defects seemed timely and important in view of the many patients currently being seen with the various residua of hepatitis and the apparent increase in the incidence of atrophic cirrhosis.

While most existing textbooks deal with thrombopenia as a chance observation in the terminal phases of hepatic disease, low thrombocyte counts and purpura have been observed in hepatic disease by several previous investigators, including Morlock and Hall,[2] Snell, Vanzant and Judd [3] and others.[4] Snell, Vanzant and Judd [3] in 1930 published one of the earliest accounts recognizing this association. Their case report dealt with a woman aged 29 years in whom a stricture of the common bile duct and obstructive biliary cirrhosis developed subsequent to cholecystectomy. Terminally there was a fall in the number of thrombocytes from 194,000 to 40,000 per cubic millimeter, with a fatal hemorrhagic diathesis. They attributed the final diffuse hemorrhagic phenomena to the combined effects of hypoprothrombinemia and thrombopenia. As will apear in subsequent paragraphs, the present study seems to indicate that diminution of the thrombocyte count and a measurable degree of capillary fragility are commonly found in hepatic disease and are of considerable importance from the point of view of differential diagnosis, prognosis and management.

While increased capillary fragility and thrombopenia frequently coexist clinically, they are, as the data to be presented will indicate, independent phenomena in many cases of cirrhosis and hepatitis. Often a common causative agent may depress thrombocyte production and simultaneously damage capillary endothelium, but abnormal fragility and thrombopenia are not necessarily synchronous in occurrence. It is possible that thrombocytes may normally play an important role in maintaining the integrity of the capillary wall by sealing defects in the capillary wall against the escape of erythrocytes. The work of Bedson,[5] however, suggests that thrombopenia or even complete absence of thrombocytes is not capable alone of producing purpura. It is a common clinical experience to find high indexes of capillary fragility in the presence of repeatedly normal thrombocyte counts, as well as normal capillary fragility with decided thrombocyte depression.

Capillary fragility depends on the cohesive resistance of the cells of the capillary wall and the intercellular cement substance to those factors tending to disrupt the integrity of the vessel wall. Reduction in thrombocytes alone will not induce increased fragility. Injury to the capillary wall must exist and in itself may be sufficient, without thrombopenia, to increase fragility. There appears to be little agreement in the literature, however, as to the exact site of such injury. In some instances, notably the toxemias and septicemias, it has been assumed that direct injury to the endothelial cells occurs. Chambers and Zweifach,[6] on the other hand, have suggested that injury to the cement substance surfacing the capillary lumen or inadequate production of it may be the important derangement predisposing to capillary hemorrhage. The work of Peck, Rosenthal and Erf [7] has implicated the supporting tissues about the capillaries, particularly the elastic fibers. Meyer

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Fellow in Surgery, Mayo Foundation (Dr. Whitesell); from the Division of Medicine, Mayo Clinic (Dr. Snell).

[1] Quick, A. J.; Stanley-Brown, M., and Bancroft, F. W.: A Study of the Coagulation Defect in Hemophilia and in Jaundice, Am. J. M. Sc. [illegible]0: 501-511 (Oct.) 1935.

[2] Morlock, C. G., and Hall, B. E.: Association of Cirrhosis, Thrombopenia and Hemorrhagic Tendency, Arch. Int. Med. 72: 69-77 (July) 1943.

[3] Snell, A. M.; Vanzant, F. R., and Judd, E. S.: The Complications and Sequelae of Prolonged Obstructive Jaundice, M. Clin. North America 13: 14[illegible]8 (May) 1930.

[4] He[illegible], S.: Blodplade-og Fibrinbestemmelsers Betydning i Leverdiagnostikk[illegible]rd med. tidskr. (Hospitalstid.) 20: 1697-1703 (Oct.) 1943.

[5] Bedson, S. P.: The Rôle of the Reticulo-Endothelial System in the Regulation of the Number of Platelets in the Circulation, Brit. J. Exper. Path. 7: 317-324 (Oct.) 1926.

[6] Chambers, R., and Zweifach, B. W.: Topography and Function of the Mesenteric Capillary Circulation, Am. J. Anat. 75: 173-205 (Sept.) 1944.

[7] Peck, S. M.; Rosenthal, N., and Erf, L. A.: Purpura, Classification and Treatment, with Special Reference to Treatment with Snake Venom, Arch. Dermat. & Syph. 35: 831-864 (May) 1937.

and Chaffee[8] have linked these changes to the action of hyaluronidase on these supporting tissues, believed to be rich in hyaluronic acid. With liquefaction of the sustaining tissues, intravascular pressure first dilates and then ruptures the vessels.

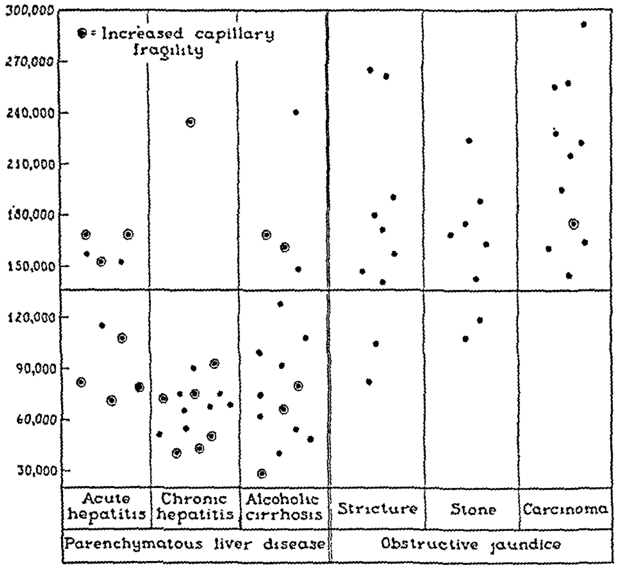

Fig. 1.—Mean thrombocyte counts in hepatic disease. The vertical column of figures at the left shows the mean thrombocyte count.

All of the many tests devised to measure capillary resistance depend on the production of petechiae by a process of rupture of the capillary wall. Two of these methods are familiar to all physicians: the Rumpel-Leede test and the negative pressure test of Hecht. In 1937, Peck, Rosenthal and Erf[9] reported a third method, in which the intradermal injection of snake venom is employed. In the present study we employed the simplest of these procedures, the Rumpel-Leede technic. An ordinary blood pressure cuff placed about the arm was inflated to 100 mm. of mercury pressure and then left in place for exactly five minutes. On release of the pressure the number of petechiae was counted in a circular area exactly 1 inch (2.5 cm.) in diameter. This determination was made on both arms, and the petechial index was calculated from the mean value obtained.

### PRESENT STUDY

In our study we followed the practice of determining the thrombocyte level by direct counting immediately after diluting the blood samples with a 2 per cent solution of sodium citrate in isotonic sodium chloride solution. Each sample was doubly checked, and, to minimize error, dependence was placed on multiple counts made on successive days instead of on single determinations. In each instance, at least three such counts were made, and the count finally considered representative of any particular case was accepted to be the mean of these multiple counts.

To establish standards of normal, fragility was determined and thrombocyte counts were made on a control series of 20 patients who represented routine hospital admissions for complaints other than those due to hepatic disease or a blood dyscrasia. Many were patients with a peptic ulcer, with and without bleeding, and all failed to manifest any retention of dye on routine testing of hepatic function with sulfobromophthalein sodium (bromsulfalein). In this way, with the technic described, the normal petechial index of capillary fragility was found to lie between 0 and 23, with most patients exhibiting less than 6 petechiae. Thrombocyte counts in these same patients established a range of normal from a low of 137,000 to a high of 219,000. We therefore accepted as our normal levels any petechial index of less than 23 and any mean thrombocyte count that was more than 137,000. The laboratory work was performed in the Division of Clinical Laboratories and in the Division of Biochemistry.

The cases in which clinical data for this investigation have been gathered represent consecutive hospital admissions for hepatic disease of one type or another over a period of five months. In this way, any bias inherent in selection of cases has been fairly well excluded. Distribution of these cases according to the type of lesion, with the respective thrombocyte counts, is shown in figure 1. Seventy cases in all were included in the study. Twenty-nine of these were classified as cases of extrahepatic obstructive jaundice. These 29 cases included 8 cases of stone in the common duct, 10 cases of stricture of the common duct and 11 cases of malignant obstruction, by carcinoma of either the bile ducts or the head of the pancreas. In 4 of these cases only thrombopenia was exhibited, and in only 1 patient was an increase in capillary fragility dent. In the remaining 41 cases in our series ther definite parenchymal disease of the liver in of hepatitis or cirrhosis. In all but 4 of th there was thrombopenia or increased ca or both. It is mainly from this

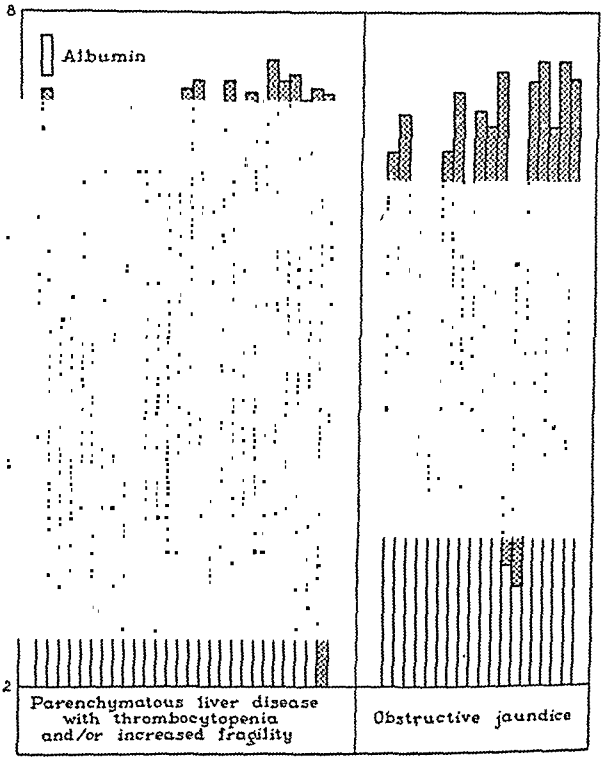

Fig. 2.—Relationship of thrombopenia and increased capillary fragility to the plasma proteins. The vertical column of figures at the left indicates the plasma protein concentrations in grams per hundred cubic centimeters.

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[8] Meyer, K., and Chaffee, E.: The Mucopolysaccharides of Skin, J. Biol. Chem. **138**: 491-499 (April) 1941.

[9] Peck, S. M.; Rosenthal, N., and Erf, L. A.: Intradermal Venom Reaction: A New Method of Determining Capillary Fragility, Proc. Soc. Exper. Biol. & Med. **35**: 614-616 (Jan.) 1937.

parenchymal disease was manifested that subsequent data have been gathered. Those cases in other categories have been included chiefly for comparison.

Ages of the patients with thrombopenia ranged from 9½ to 70 years, with male patients predominating by a ratio of 2.2 : 1. In 2 patients a diagnosis of homologous serum jaundice was established. In many of the cases of chronic hepatitis it was difficult to arrive at any definite idea as to time of onset or duration of the disease. Biopsy of the liver in these cases often revealed evidence of a long-standing progressive pathologic process. All of the patients with acute hepatitis were decidedly icteric and had high elevation of the value for serum bilirubin; most of the patients with chronic hepatitis manifested minimal clinical icterus and only slightly elevated values for serum bilirubin. As would be expected, most patients with alcoholic cirrhosis exhibited little or no jaundice. In none of these categories did there appear to be any correlation between the presence or the degree of jaundice and the thrombocyte count or the petechial index of fragility.

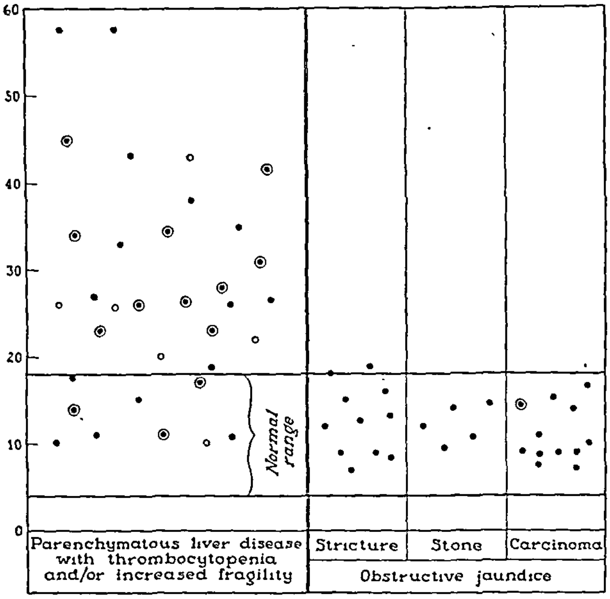

Fig. 3.—Relationship of thrombopenia and increased capillary fragility to the values of serum gamma globulin. The vertical column of figures at the left indicates the zinc sulfate (Kunke) turbidity estimation of gamma globulin in units. The black dot indicates thrombopenia; the circle indicates increased capillary fragility, and the circle-enclosed dot indicates thrombopenia and increased capillary fragility.

One of the symptoms most commonly mentioned by these patients was an increased tendency to bleed with a history of recurrent epistaxis, bleeding gums and melena, at times extending back over several years. This observation appeared as a rule to be related to severe parenchymal damage to the liver. Since many of these patients manifested varying degrees of prothrombin deficiency in addition to their thrombocyte and capillary defects, it is difficult to evaluate the exact role of each abnormality in this tendency toward increased bleeding.

While the irreversibility of the hypoprothrombinemia [illegible]uently appeared to supersede the thrombocyte defi- [illegible] as an explanation for bleeding, no correlation [illegible] between the presence or degree of thrombo- [illegible]creased capillary fragility and the pro- [illegible] Low thrombocyte counts frequently [illegible]ods without demonstrable bleeding and, conversely, often appeared to have been responsible for a fatal hemorrhagic state when the prothrombin time was at or near normal limits. This was particularly so when the blood thrombocyte counts were depressed to a critical level of 50,000 or below. In several surgical patients bleeding on this same basis proved serious and extremely difficult to control, necessitating transfusions and extensive local use of thromboplastic substances.

On physical examination of these patients with thrombopenia and increased capillary fragility, palpably enlarged spleens were found in 30 per cent of the cases of acute hepatitis, in 43 per cent of the cases of chronic hepatitis and in 29 per cent of the cases of alcoholic cirrhosis. The liver was palpably enlarged in 70 per cent of the cases of acute hepatitis, in 43 per cent of the cases of chronic hepatitis and in 71 per cent of the cases of alcoholic cirrhosis. Ascites was found in only 20 per cent of the cases of acute hepatitis, in 43 per cent of the cases of chronic hepatitis and in 57 per cent of the cases of alcoholic cirrhosis.

Since stress has been placed on the association of thrombopenia, increased capillary fragility and parenchymal disease of the liver, it is important to review this relationship in terms of the physiologic and biochemical alterations ordinarily encountered in hepatocellular disease. The prothrombin time and values for serum bilirubin have already been discussed.

*Plasma Proteins.*—While it is commonly stated that the concentration of total protein is reduced in parenchymal disease of the liver, in many of our cases the totals were in the normal range. Invariably, however, when values in the normal range were obtained, they were due to an increase in the globulin fraction to a value well above the usually accepted normal of 2.7 Gm. per hundred cubic centimeters, with either equalization or reversal of the albumin-globulin ratio (fig. 2). This is in agreement with the observations of others, including the recent report of Salvesen and Lödöen.[10]

*Additional Laboratory Data on Cases Reported*

| Procedure | Normal Values | Case Number 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Thrombocytes per cubic millimeter (mean) | More than 137,000 | 67,000 | 43,000 | 75,000 | 49,000 |
| Prothrombin time, seconds | 19 to 20 | 23 | 21 | 25 | 24 |
| Serum bilirubin, mg. per 100 cc. | | | | | |
| Direct | 0 | 1.2 | 1.6 | 0 | 3.4 |
| Indirect | Less than 0.6 | 0.7 | 1.4 | 1.4 | 0.8 |
| Serum proteins, Gm. per 100 cc. | 6.8 | 7.6 | 7.6 | 6.6 | 6.1 |
| Albumin | 4.1 | 2.7 | 3.2 | 3.5 | 3.0 |
| Globulin | 2.7 | 4.9 | 4.4 | 3.1 | 3.1 |
| Zinc sulfate turbidity, units | 4 to 18 | 58.2 | 45 | 26 | 11 |
| Thymol turbidity, units | 5 | 22 | 24 | 3.5 | 4 |
| Cephalin-cholesterol flocculation, grade | 0 | 4 | 4 | ... | 4 |
| Blood cholesterol, mg. per 100 cc. | 150 to 250 | 155 | 167 | 155 | 160 |
| Blood cholesterol esters, mg. per 100 cc. | 100 to 175 | 62 | 78 | 105 | 56 |
| Alkaline phosphatase, Bodansky units | 5 | ... | 4.5 | ... | ... |
| Sulfobromophthalein sodium retention, grade | 0 | 2 | 3 | ... | 4 |

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9. Brain, [illegible] Neuropsychiatry;

10. Roger, H.; [illegible] -otiques aigues lum[illegible] -e, Rev. neurol. [illegible]

[10] Salvesen, H. A., and Lödöen, O.: Variations in the Serum Proteins in Liver Disease with Special Reference to Their Diagnostic Significance, Acta. med. Scandinav. **130:** 525-558, 1948.

Changes in the globulin fraction were studied further by investigation of the gamma globulin in the serum, employing the zinc sulfate turbidity method of Kunkel.[11] In most instances definitely elevated values were found (fig. 3). We do not feel, however, that the globulin exerts any direct influence in reducing the thrombocyte count. Ten cases of multiple myeloma, in all of which pronounced hyperglobulinemia occurred, were reviewed, and in all the thrombocyte levels were normal. In addition, the in vitro effect of relatively large amounts of gamma globulin on the thrombocyte count was checked and no change was observed. In all probability the thrombocyte defect in parenchymal disease of the liver occurs concomitant with but not secondary to the hyperglobulinemia encountered.

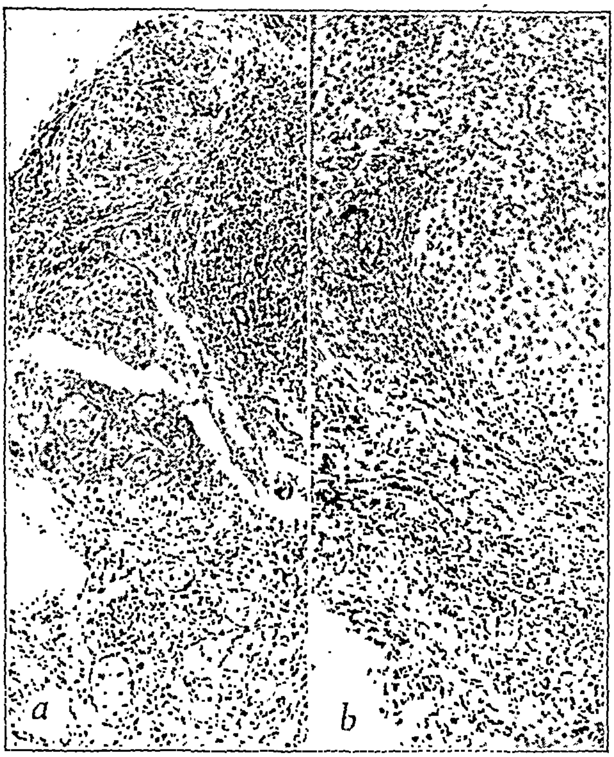

Fig. 4.—Appearance of the hepatic tissue stained with hematoxylin and eosin; *a*, case 1 (× 90), and *b*, case 2 (× 100).

*Sulfobromophthalein Sodium Test.*—This test is generally conceded to be a sensitive indicator of hepatic disease in the absence of jaundice. All of our patients without icterus but with thrombopenia or increased capillary fragility manifested dye retention of more than 12 per cent at the end of one hour.

*Flocculation Tests of Hepatic Function.*—With the close correlation between thrombopenia and increased capillary fragility and the plasma colloids, it was not surprising to find a similar correlation with the flocculation tests of hepatic function. In 88 per cent of our patients cephalin-cholesterol flocculation tests gave strongly positive results, and in 64 per cent thymol turbidity was increased.

*Alterations in Other Blood Factors.*—To ascertain whether or not the thrombocyte defect in parenchymal disease of the liver represented a specific involvement of a single cell line or was merely part of a generalized depression of all of the formed elements of the blood, simultaneous erythrocyte and leukocyte counts were made and differential smears were examined for all of our patients. With the exception of a mild secondary anemia in about one third of these patients, no other change was noted. These observations on the peripheral blood were substantiated by studies of sternal marrow on a number of our patients with thrombopenia. All revealed not only active marrows but also megakaryocytes in adequate numbers.

It was difficult to secure a true appraisal of the bleeding, coagulation and clot retraction times because of the associated hypoprothrombinemia in most cases. In general, however, the bleeding time was prolonged with normal or slightly prolonged clotting time and poor retractility of the clot.

We can best present the pathologic changes encountered in these patients with thrombopenia and increased capillary fragility by briefly reviewing several typical cases of chronic hepatic disease in which the results of biopsy of the liver were available. It will be seen that a variety of pathologic pictures may be associated with thrombopenia.

## REPORT OF CASES

Case 1.—A girl aged 17 years was admitted to the hospital with a history of recurrent epistaxis and bleeding gums for the past two years; these symptoms had been more pronounced during the last six months before her visit to the clinic. Her past history was essentially normal except for an extensive series of orthopedic surgical procedures done three years before for severe scoliosis.

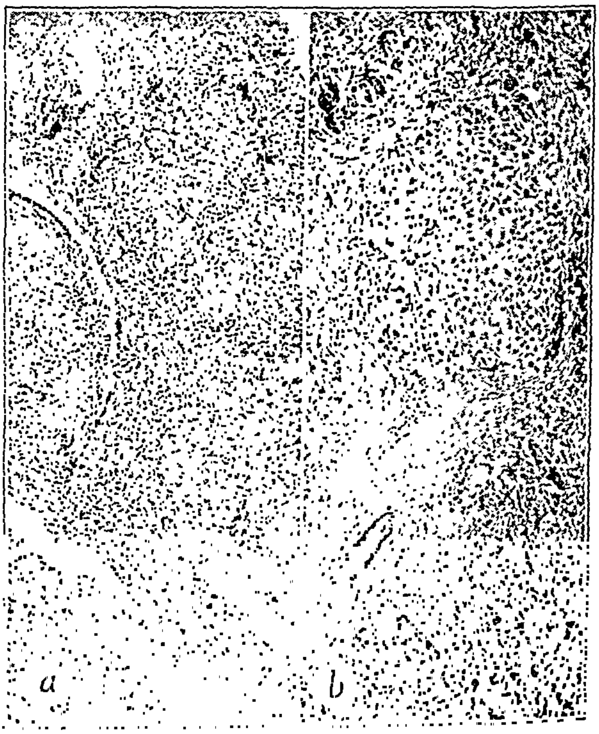

Fig. 5.—Appearance of the hepatic tissue stained with hematoxylin and eosin; *a*, case 3 (× 50), and *b*, case 4 (× 100).

On physical examination she appeared slightly icteric; t'
was a small subconjunctival hemorrhage on the left and :
oozing of blood from the margins of the gums; sthesia,
was palpable 2 fingerbreadths below the costal
her spleen also was palpable. omplications
g.) 1945.
The mean thrombocyte count was 67,000 R.: Arachnoiditis
The results of hepatic function studies A. **102**: 665 (Nov.

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11. Kunke f Alterations of Serum Gamma Globulin by a Proc. Soc. Exper. Biol. & Med. **66**: 217-224 .

The results of a sternal marrow study were not diagnostic. There was some increase in eosinophils, but the megakaryocytes seemed normal in number.

A biopsy of the liver performed with the aid of a Vim-Silverman needle showed that the architecture of the liver was barely discernible; fibroblastic, cellular infiltration of the hepatic lobules was so pronounced that it split the individual lobules into small, acinar-like groups of hepatic cells. No regeneration of bile ducts was evident, and no deposits of bilirubin could be seen; some of the hepatic cells had undergone eosinophilic degeneration (fig. 4*a*). This was believed to represent severe subacute hepatitis.

CASE 2.—A white man aged 59 years was admitted to the hospital with the complaint of painless jaundice, malaise and anorexia of ten days' duration. There was a past history of two similar episodes; one had occurred eight years previously and had lasted for three to four months, and the other had occurred seven months previously, had lasted for six weeks and had required hospitalization.

On physical examination moderate icterus was evident and the liver could be felt 2 fingerbreadths below the umbilicus; it was firm, smooth and not tender. The spleen was not palpable. There was a pronounced increase in capillary fragility.

The mean thrombocyte count was 43,000. The results of hepatic function studies are given in the table.

A needle biopsy of the liver revealed severe distortion of the hepatic architecture with extensive fibrosis (fig. 4*b*). A very cellular fibrous tissue replaced much of each lobule, and in some areas just a few parenchymal cells could be seen, isolated by fibrous tissue. Regeneration of parenchymal cells and bile ducts was minimal. Some intracellular deposits of bilirubin could be seen scattered throughout the section. This was considered to be the picture of a degenerative cirrhosis or chronic atrophy of the liver.

CASE 3.—A boy aged 14 years was admitted to the hospital for diagnosis because of weakness, malaise, unexplained fever and epistaxis. Three years previously he had had a similar episode lasting six weeks, and at that time his physician in his home community had noted "an enlarged liver and spleen." One year before admission he had a four day episode of nausea, vomiting, fever and pain in the upper part of the abdomen with hepatomegaly and splenomegaly. All symptoms subsided except the fever; the temperature continued to rise to 100 or 101 F. each afternoon. His family history was significant in that a brother aged 14 years had died "with cirrhosis" eight months after splenectomy, which was several months before the onset of this patient's illness.

On physical examination no icterus was evident. The liver was enlarged to 2 fingerbreadths below the costal margin, and it was soft and not tender. The spleen was palpable 5 cm. below the costal margin. No spiders or ascites were evident.

The mean thrombocyte count was 75,000. The results of hepatic function studies are given in the table.

A needle biopsy of the liver disclosed that the architecture of the liver was fairly well preserved, but considerable destruction could be seen at the periphery of the lobules (fig. 5*a*). The portal spaces were filled with an active inflammatory tissue which contained polymorphonuclear cells, round cells and fibroblasts. Many young regenerating bile ducts could be seen. This was believed to be consistent with the chronic phase of a viral hepatitis and possibly the beginning of postnecrotic cirrhosis.

CASE 4.—A white man aged 40 years was admitted to the hospital with a history of excessive alcoholism of fifteen years' duration. Six months before admission he had noted the onset of case of fatigability, anorexia, mild icterus, ascites and eripheral edema. He was admitted to the hospital in shock, tly after several severe episodes of hematemesis and sp

adm ysical examination mild icterus was evident and the lpably enlarged to the level of the umbilicus. The t be felt. There was pronounced ascites and l edema. No spider angiomas or palmar

The mean thrombocyte count was 62,000, and an increased capillary fragility was evident. The results of hepatic function studies are given in the table.

Needle biopsy of the liver disclosed that the dominant feature was pronounced fibrosis, with regeneration of bile ducts throughout the section (fig. 5*b*). Only minimal nodular regeneration was evident, and little or no fat or bilirubin was seen. This was considered to represent typical portal cirrhosis of long standing.

## COMMENT

The primary significance attached to the observation of a tendency to bleed, thrombopenia and increased capillary fragility in hepatic disease unquestionably resides in the importance of this syndrome in differential diagnosis. Often this entity may so closely simulate the accepted clinical picture of essential thrombopenic purpura as to deceive not only the internist but the trained hematologist as well. When confirmatory signs of hepatic disease such as ascites, hepatomegaly and edema are present, there is but slight hazard of confusing these two entities. Unfortunately, however, as we have noted, these signs frequently are not evident, so that it is extremely important for the clinician to maintain a high index of suspicion toward any diagnosis of idiopathic thrombopenic purpura until thrombopenia secondary to disease of the liver has been excluded. We cannot emphasize too strongly the imperative need for a careful evaluation of hepatic function in all patients with so-called idiopathic thrombopenic purpura. If necessary, punch biopsy of the liver should be performed, since this procedure may be carried out with negligible risk and will often yield conclusive proof as to the diagnosis. It is only by a careful process of exclusion that secondary thrombopenia of hepatic causation can be ruled out.

While these conclusions pertain to differential diagnosis, the thrombopenia of hepatic disease has equally important surgical connotations. This is particularly so today with the increasing tendency toward surgical attack on the complications of cirrhosis by such measures as lienorenal shunt. It is also significant when surgical procedures are contemplated on the bile ducts for the relief of prolonged obstruction which has already produced serious secondary parenchymal damage in the form of biliary cirrhosis. Our observations in these circumstances, as we have shown, are at variance with the observations of Coller and Farris[12] in 1941, who stated, "It is generally agreed that the blood of jaundiced patients is not deficient in calcium, fibrinogen or platelets." To the contrary, we feel that a decided reduction in number of thrombocytes may exist, and if these patients are subjected to operation, the thromboplastic deficit may add materially to the risk of serious hemorrhage. It must be emphasized that in these circumstances estimations of the prothrombin time alone are not sufficient to secure an adequate evaluation of the hemostatic capabilities of the patient.

Concomitant with the added risk of hemorrhage there is also the distinct danger of one's precipitating terminal hepatic insufficiency in these patients by adding to the functional burden of a liver with a reduced reserve.

## CONCLUSIONS

1. Thrombocyte and capillary defects are extremely common in parenchymal disease of the liver.

2. There is some general correlation between the occurrence of these defects and an abnormal state of the

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9. Brain, Neuropsychiatry

10. Roger, H.; otiques aigues lun. e, Rev. neurol. 7

12. Coller, F. A., and Farris, J. M.: The Management of the Jaundiced Patient, Surg., Gynec. & Obst. 73: 21-29 (July) 1941.

serum colloids, such as, notably, a great increase in gamma globulin.

3. It is important to differentiate the thrombocytic and capillary defects due to hepatic disease from true idiopathic thrombopenia. All patients with iodiopathic thrombopenic purpura should be subjected to a complete evaluation of hepatic function, supplemented by biopsy of the liver if necessary, before splenectomy is considered.

4. When thrombopenia and increased capillary fragility secondary to hepatic disease occur, surgical treatment is complicated by the added risk of hemorrhage over and above that due to any existing deficiency of prothrombin. In addition, there is the danger of precipitation of terminal hepatic insufficiency.

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# THE DANGERS OF INTRATHECAL MEDICATION

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The intrathecal space is so frequently chosen for the administration of serums, drugs, antibiotics and anesthetic agents that it is sometimes forgotten that numerous serious and tragic sequelae have been reported following the use of this route. It therefore seems advisable to reemphasize the dangers which may ensue and critically to reevaluate the rationale of this mode of drug administration.

The injection of any foreign substance into the subarachnoid space produces an aseptic meningeal reaction characterized principally by pleocytosis and increased protein content.[1] This reaction may occur following a purely diagnostic spinal puncture, a later tap revealing pleocytosis. Reynolds and Wilson[2] reported 3 cases in which headache, nuchal stiffness, stupor, delirium and fever appeared from six to twelve hours after lumbar puncture. Repeated taps revealed sterile cloudy fluid with cell counts ranging from 2,900 to 17,670.

The introduction of each new therapeutic agent into the intrathecal space has been inevitably followed by reports of serious damage to the nervous system. Usually, neurologic complications occur more frequently when the neural tissue is already damaged. The Swift-Ellis treatment resulted in many cases of paraplegia, vesical disturbances and death from concomitant meningitis.[3] The severe neurologic catastrophes of this method of therapy were undoubtedly an important factor leading to its almost universal abandonment. Purulent aseptic meningitis was noted in 10 cases of tetanus, treated with antiserum intraspinally, which came to autopsy at the Laboratory of Neuropathology of the Philadelphia General Hospital during a three year period.[4] Likewise, grave neurologic sequelae occurred following the intrathecal use of antimeningococcic serums and convalescent serums for poliomyelitis.

## NEUROLOGIC SEQUELAE OF SPINAL ANESTHESIA

Neurologic disturbances following intrathecal medication, even when the nervous system is presumably free from disease, are illustrated by the complications following the injection of alcohol and spinal anesthetics. A Brown-Séquard paralysis following paravertebral alcohol injection for angina pectoris has been reported by Molitch and Wilson.[5] Other neurologic residuals, subsequent to intraspinal injection of alcohol, are not uncommon.

A white housewife, aged 24, was given a subarachnoid injection of 16 cc. of absolute alcohol between the fourth and fifth thoracic vertebrae to control severe asthma. There immediately developed a transverse myelitis with complete paraplegia, disturbance of sphincter control and sensory loss below the third thoracic vertebra. Three years later the patient remained unimproved.

Neurologic complications following spinal anesthesia have been reported by many authors. In Thorsen's[6] series of 2,493 cases, aseptic meningitis occurred once in every 800 instances of spinal anesthesia and symptoms pointing to injury of the medullary substance, nerve roots or cauda equina occurred at least once in every 200 cases. Such injuries may arise from neurotoxic and myelolytic effects of the anesthetic agent producing aseptic meningitis or an obliterative arachnoiditis. Lesions of the cauda equina or conus medullaris, neuritis, radiculitis, meningomyelitis, transverse myelitis, myeloradiculitis, focal cerebral lesions, cranial nerve paralyses, aseptic and septic meningitis and arachnoiditis have been reported.[7] The symptoms appeared within a few hours to several weeks after the anesthesia.[8] Why severe neurologic complications should result in some instances while many patients are free of after-effects is not clear. It is usually accepted that a history of some previous disease or injury involving the nervous system, particularly the spinal cord, is a definite contraindication to the use of spinal anesthesia. The dangers of spinal anesthesia in such instances are illustrated by the following case:

A white housewife aged 44 had had infantile paralysis at the age of 2 years, from which she recovered with no disability except deformity and weakness of the left foot. Three weeks after the patient submitted to spinal anesthesia for an appendectomy there developed progressive weakness and incoordination of the lower extremities and urinary urgency; she was unable to sit erect, stand or walk. Examination revealed spastic paraplegia with partial sensory loss below the fourth thoracic vertebra. Spinal fluid examination and roentgenograms of the spine revealed no abnormalities. There has been no improvement over a five year period. Subsequently the patient received a substantial financial award in settlement.

Spinal anesthetics may also precipitate the appearance of symptoms and signs of some neurologic disorder previously latent.

A white man aged 28, a crane operator, received spinal anesthesia for an operation for removal of a ruptured cartilage from the right knee. A few days later there developed urinary incontinence and weakness of the right leg. Later the man complained of pains in the lower part of the back, paresthesias and weakness of both hands. His symptoms have waxed and waned during the past three years. Examination now shows

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[1] Merritt, H. H., and Fremont Smith, F.: The Cerebrospinal Fluid, Philadelphia, W. B. Saunders Company, 1937, p. 220.

[2] Reynolds, K. E., and Wilson, G.: Aseptic Meningitis Following Diagnostic Lumbar Puncture, J. A. M. A. **102:** 1460 (May 5) 1934.

[3] Dattner, B.: The Management of Neurosyphilis, New York, Grune & Stratton, Inc., 1944, p. 170.

[4] Riggs, H.: Personal communication to the authors.

[5] Molitch, M., and Wilson, G.: Brown-Séquard Paralysis Following Paravertebral Alcohol Injection for Angina Pectoris, J. A. M. A. [illegible] 247 (July 25) 1931.

[6] Thorsen, G.: Neurologic [illegible] After Spinal Anesia, Acta chir. Scandinav. (supp. 121) [illegible]

[7] Yaskin, H. A., and Alpers, [illegible] Following Spinal Anesthesia, Ann. Int. Med. **23:** 184 ([illegible]) 1945.

[8] Kennedy, F.; Somberg, H. M., and Goldberg, [illegible]: Arachnoiditis and Paralysis Following Spinal Anesthesia, J. A. [illegible] **102:** 665 (Nov. 3) 1945.

bitemporal optic pallor, a spastic ataxic gait, pronounced weakness of both legs, slight weakness of both arms, increased deep reflexes, absent abdominal reflexes, bilateral pathologic great toe and digital reflexes and some disturbance in position and vibratory sense in the legs. The patient is considered to be suffering with multiple sclerosis.

A Negro aged 28, complaining of pain in the right upper abdominal quadrant, without any reported neurologic signs, received spinal anesthesia for a laparotomy which revealed a normal gallbladder. Thereafter he complained of pain in the lower thoracic area, weakness and numbness of the legs and urinary incontinence. There rapidly developed signs of a complete transverse lesion at the level of the eighth thoracic vertebra. Spinal fluid and roentgenographic examinations gave results that were within normal limits. Necropsy disclosed an intramedullary tuberculoma in the midthoracic area.

Spinal anesthesia is contraindicated also in patients with congenital anomalies of the nervous system, with known virus infections and with a history of delayed return of motor function or severe paresthesias following a previous spinal anesthesia. Conditions resulting in severe inanition and likely to be accompanied with well defined vitamin deficiency are also probably contraindicative, even though clinical neurologic symptoms are not present prior to administration of the anesthetic.

A farmer aged 55 had symptoms of peptic ulcer for seven years, during which interval he cooperated poorly with medical treatment. For three months previous to operative intervention he had vomited frequently. His dietary intake had been limited chiefly to milk and cream, and he had lost 50 pounds (22.7 Kg.). Spinal anesthesia was employed for a gastric resection. Three days after the operation the patient complained of urinary incontinence and severe paresthesias of the legs. Neurologic examination disclosed evidence of a peripheral neuropathy with deep muscle tenderness, bilateral foot drop, absent ankle jerks and a stocking type of anesthesia. The patient was placed on a regimen of large doses of thiamine hydrochloride given by the intramuscular route. The paresthesias subsided in the course of a month, but the motor weakness spread to involve both lower extremities, and a complete loss of sensation developed below the first lumbar vertebra. Six months later examination of the spinal fluid revealed a block, which was shown by roentgenologic studies employing a contrast medium (pantopaque®) to be in the lower thoracic area. Laminectomy disclosed a dense inoperative adhesive arachnoiditis. There has been no improvement in the neurologic condition of the patient in three years.

## THERAPEUTIC SPINAL FLUID CONCENTRATIONS

In recent years the proved value of the sulfonamide drugs, penicillin and streptomycin in the treatment of meningitis and other infections of the nervous system has led to their frequent intrathecal administration. It was early demonstrated that adequate therapeutic concentration of sulfonamide compounds could be obtained in the spinal fluid following the oral or parenteral administration of these agents. Nevertheless, intrathecal administration was resorted to by some, despite the fact that most of the sulfonamide drugs were known to be neurotoxic. Many cases of peripheral and local neuropathy, encephalomyelitis, toxic psychosis and hemorrhagic encephalitis occurred following systemic administration of the drugs.[9] Paraplegia, cauda equina paralysis, radiculitis, arachnoiditis and necrosis of the spinal cord were reported following subarachnoid administration. Roger and his co-workers,[10] reporting 3 cases of necrosis of the cord, recommended that the intraspinal route be definitely abandoned.

In the early days of penicillin therapy, when the supply was limited, intrathecal injection was considered mandatory because it was thought that insufficient spinal fluid concentrations were obtained following systemic administration of the agent. The evidence whether adequate therapeutic concentrations of penicillin can be obtained in the spinal fluid following systemic administration has been contradictory. Rosenberg and Sylvester[11] obtained satisfactory spinal fluid concentrations in 8 cases of meningitis following intravenous or intramuscular injections of 20,000 to 40,000 units of penicillin. Dumoff-Stanley and her co-workers[12] concluded that systemic administration of penicillin in the commonly used dosages will not consistently produce adequate therapeutic concentrations in the spinal fluid. Extremely high dosages with high serum levels must be used before therapeutic concentrations can be detected even inconsistently. Recently Boger, Wilson and Baker[13] have shown that in neurosyphilitic patients without evidence of meningeal irritation therapeutic levels of penicillin in the spinal fluid could be obtained when 100,000 units of the drug were given intramuscularly at three hour intervals. When, in addition, carinamide was given orally every three hours, the spinal fluid concentrations were increased fourfold. Penicillin (500,000 units) and carinamide (3 Gm.) given together intravenously produced therapeutic spinal fluid concentrations in one hour.

## NEUROTOXIC ACTION OF PENICILLIN

The neurotoxic action of penicillin has been investigated by Johnson, Walker and their associates.[14] Large doses of penicillin injected intrathecally in some instances produced convulsions followed by coma or death. In a series of 51 patients with conditions other than primary disease of the central nervous system, the electroencephalogram was found to be abnormal in more than 60 per cent even when penicillin was administered only systemically. Johnson and Walker[15] also report a case in which 50,000 units of intraventricular penicillin produced coma and vascular collapse. Fifteen thousand units of the drug produced transient twitchings of one side of the body lasting four hours. Clinical reports of neural damage following intrathecal administration of penicillin soon appeared. A subarachnoid block was noted in 6 of 67 cases reported by Appelbaum and Nelson.[16] In Sweet's[17] series of 16 patients with pneumococcic meningitis, pain developed in the legs and lower part of the back of 2 after intrathecal injection. These symptoms disappeared after penicillin therapy was discontinued. Two patients manifested severe reactions with sharp pains in the legs, dysesthesia, vesical disturbances and paralysis of both legs. There was a gradual recovery after the drug was discontinued.

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[9] Brain, W. R., and Strauss, B.: Recent Advances in Neurology and Neuropsychiatry, Philadelphia, The Blakiston Company, 1946, pp.45-46.

[10] Roger, H.; Cornil, L., and Paillas, J. E.: Les meningo-myélites otiques aigues lumbaires apres injections intra-rachidiennes de sulfa- e, Rev. neurol. **73:** 457 (Sept.-Oct.) 1941.

[11] Rosenberg, D. H., and Sylvester, J. C.: The Excretion of Penicillin in the Spinal Fluid in Meningitis, Science **100:** 132 (Aug. 11) 1944.

[12] Dumoff-Stanley, E.; Dowling, H. F., and Sweet, L. K.: Absorption into and Distribution of Penicillin in Cerebrospinal Fluid, J. Clin. Investigation **25:** 87 (Jan.) 1946.

[13] Boger, W. P., and Wilson, W. W.; Rapid Attainment of Therapeutic Penicillin Concentration in the Cerebrospinal Fluid, Am. J. M. Sc. **217:** 593 (June) 1949. Boger, W. P.; Baker, R. B., and Wilson, W. W.: Penicillin in the Cerebrospinal Fluid Following Parenteral Penicillin, Proc. Soc. Exper. Biol. & Med. **68:** 101, 1948.

[14] Johnson, H. C.; Walker, A. E.; Case, T. J., and Kollros, J. K.: Effects of Antibiotic Substances on the Central Nervous System, Arch. Neurol. & Psychiat. **56:** 184 (Aug.) 1946.

[15] Johnson, H. C., and Walker, A. E.: Intraventricular Penicillin: A Note of Warning, J. A. M. A. **127:** 217 (Jan. 27) 1945.

[16] Appelbaum, E., and Nelson, J.: Penicillin in the Treatment of Pneumococcic Meningitis, J. A. M. A. **128:** 778 (July 14) 1945.

[17] Sweet, L. K.; Dumoff-Stanley, E.; Dowling, H. F., and Lepper, M. M.: The Treatment of Pneumococcic Meningitis with Penicillin, J. A. M. A. **127:** 263 (Feb. 3) 1945.

One patient who received penicillin both intracisternally and by the lumbar route died after the spinal fluid became bloody. Transverse myelopathy which occurred in a woman aged 66 was reported by Siegal.[18] Practically no improvement had occurred four months later. Erickson, Masten and Suckle,[19] reporting 4 cases, stated that the most frequent and characteristic reaction occurred in the meninges and led to adhesive spinal arachnoiditis and in severer cases to transverse myelopathy. The frequency of relapses in cases of meningitis treated with penicillin suggested the possibility that a reactive exudate, resulting from the irritating effects of penicillin in the subarachnoid space, may encyst areas of infection in the meninges which are inaccessible to penicillin by any route and these may later lead to reinfection. In another paper Walker,[20] reports the development in a patient of difficulty in urination, constipation and pain above the left ankle following intrathecal injection of the drug. Examination showed perianal hyperesthesia, an atonic rectal sphincter, sluggish ankle jerks and weakness on flexion of both knees and the left foot. The symptoms were still present five months later. In another patient transverse myelopathy developed following intrathecal administration of 75,000 units of penicillin. Chronic leptomeningeal thickening was apparent when laminectomy was performed.

We have personally observed a number of instances in which transient vesical disturbances, paresthesias and moderate weakness of the lower extremities with diminished or absent knee jerks and ankle jerks followed the intrathecal administration of penicillin. All symptoms gradually cleared. The following case illustrates a severer complication.

A girl aged 4 months contracted lobar pneumonia. The pediatrician thought nuchal rigidity was present on clinical examination, but results of the spinal fluid examination were normal. Nevertheless 10,000 units of penicillin were given intrathecally on two occasions. Recovery was considered uneventful until two weeks later, when it was noticed that the infant did not move her legs. Examination revealed a spastic paraplegia with a sensory loss below the level of the first lumbar vertebra. Laminectomy disclosed extensive adhesive arachnoiditis.

### TOXICITY OF STREPTOMYCIN

Since early reports indicated that relatively little streptomycin diffused into the spinal fluid following intramuscular injection, although larger amounts might be found in the presence of meningitis, supplemental intrathecal administration of the drug was recommended. Evidence of the toxic effects of intrathecal streptomycin is rapidly accumulating. Meningeal signs and pleocytosis of the spinal fluid were observed by Farrington and co-workers.[21] Patients receiving larger doses of streptomycin intrathecally had headaches, nystagmus, bradypnea, urinary retention and somnolence that at times approached stupor. Similar complications were noted by other investigators. Cairns[22] and his colleagues reported that subsequent to the intrathecal injection of streptomycin 4 patients became comatose and 2 died of respiratory failure. They cautioned that intrathecal use of the agent was dangerous. Applied to the cerebral cortex of cats and monkeys in doses of 1,250 units, streptomycin induced convulsions; cisternal injection of 5,000 units in a monkey produced transient signs of severe cerebellar disease. We have seen several patients in whom pronounced cerebellar signs appeared immediately after streptomycin was given intracisternally.

In 4 patients who died from tuberculous meningitis after unsuccessful intrathecal and intramuscular administration of streptomycin, the spinal meninges have exhibited a considerably more extensive purulent exudate and a much more thinned-out spinal cord than is found in untreated patients. It is uncertain whether these changes are attributable to the use of streptomycin or whether prolongation of life has permitted a more intensive development of the tuberculous process.[4]

### COMMENT

There is no doubt that intrathecal injections of drugs, anesthetics and antibiotics produce neurologic complications in many cases. The neurologic residuals are often serious, permanent, disabling and unamenable to any known therapy. Their prevention is of prime importance. Consideration must be given to whether intrathecal administration is necessary and, if it is, whether the benefits derived therefrom outweigh the potential hazards. In reference to spinal anesthesia, Kennedy[8] has stated that "the gravity of possible spinal arachnoiditis and subsequent paralysis must enter into the meditations of surgeons and anesthetists when determining procedure." Certainly an adequate neurologic history and examination should be completed for every patient considered for spinal anesthesia, and another anesthetic should be chosen if any abnormalities are observed or a history of previous neurologic disorder is elicited.

When adequate spinal fluid concentrations of an agent can be obtained following systemic administration, as with the sulfonamide compounds and penicillin, intrathecal administration is truly meddlesome mischief and is strictly contraindicated. In respect to the intrathecal use of streptomycin, more extensive studies are indicated to confirm definitely whether adequate therapeutic spinal fluid concentrations are obtained from systemic administration alone. A controlled study in which alternate patients did not receive intrathecal medication would be of interest. One should remember that the hematoencephalic barrier is diminished in disease of the nervous system, and adequate diffusion may occur under pathologic conditions even though permeability is inadequate in normal experimental subjects. Likewise, as stressed by Reese and Masten,[23] the spinal fluid reflects only what is going on in the adjacent neural tissues. The infection is in the meninges and neural parenchyma, which have an adequate blood supply. Diffusion of therapeutic substances through the subarachnoid space is slow, and many regions of the nervous system are relatively inaccessible. Since the usual direction of flow of cerebrospinal fluid is from the ventricles to the subarachnoid space, it is doubtful that an appreciable quantity of any medicament introduced into the lumbar sac diffuses to any extent through the subarachnoid pathways. Probably any benefit from therapeutic substances injected intrathecally occurs only after absorption into the blood stream has occurred. Thoughtful consideration of these facts may avoid many tragic neurologic sequelae without depriving the patient of every chance of maximum therapeutic aid.

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[18] Siegal, S.: Transverse Myelopathy Following Recovery from Pneumococcic Meningitis, J. A. M. A. **129:** 547 (Oct. 20) 1945.

[19] Erickson, T.; Masten, M. G., and Suckle, M. M.: Complications of Intrathecal Use of Penicillin, J. A. M. A. **132:** 561 (Nov. 9) 1946.

[20] Walker, A. E.: Toxic Effects of Intrathecal Administration of Penicillin, Arch. Neurol. & Psychiat. **58:** 39 (July) 1947.

[21] Farrington, R. F.; Smith, M. M.; Bunn, P. A., and McDermott, W.: Streptomycin Toxicity, J. A. M. A. **134:** 681 (June 21) 1947.

[22] Cairns, H.; Duthie, E. S., and Smith, M. V.: Intrathecal Streptomycin in Meningitis, Lancet **2:** 153 (Aug. 3) 1946.

[23] Reese, H., and Masten, M.: Year Book of Neurology, Psychiatry and Endocrinology, Chicago, The Year Book Publishers, Inc. *1944 p. 121; 1945, p. 144.*

### SUMMARY

The occurrence of serious neurologic complications following intrathecal administration of many anesthetics, drugs, serums and antibiotics illustrates the grave potential dangers of intrathecal administration. The use of this portal is illogical for most therapeutic agents and may be unnecessary for all. Consideration must be given to whether the benefits obtained outweigh the risk of the grave complications which may ensue.

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# PREFRONTAL LEUKOTOMY, AN EVALUATION

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## HISTORICAL BACKGROUND

In 1936 Egas Moniz [1] called attention to a brain operation involving destruction of the anterior portion of the frontal lobe in the treatment of the psychoses. He introduced the terms "prefrontal leukotomy" and "psychosurgery" (*psychochirurgic*). Very shortly following the appearance of his monograph, Freeman and Watts began their studies in this country. Although the procedure was soon rather widely practiced, with the exception of the work of Freeman and Watts [2] the number of cases studied was small. The early results which were observed to follow this method of treating psychotic patients were by no means uniform. In many instances considerable objection was raised to the idea that psychotic persons could be benefited by a destructive brain lesion, and the procedure was severely criticized.

The work of Moniz and his followers was not entirely empiric but grew out of a great deal of knowledge about frontal lobe pathology and symptomatology. It followed carefully recorded observations and a great deal of experimental work, particularly that on monkeys by Jacobson and Fulton in New Haven, Conn.[3]

## GENERAL EVALUATION OF OPERATIVE RESULTS

Eleven years' experience has now accumulated and it becomes desirable to make some general evaluations concerning the effectiveness of the operation. It must be borne in mind, however, that there are a number of reasons why it is not easy to arrive at completely satisfying statistics. First, the operative technic varies with the surgeon. The exact amount of medullary substance and cortex that is destroyed is often unknown. The preoperative condition of the patient also varies greatly. What would be considered, in exact sciences, a proper control is not currently available in dealing with these problems of human behavior and mental symptoms. Perhaps at this time the best that can be offered is a general consensus regarding the two major considerations—namely, the benefits from the operation and the defects which follow it.

In the great majority of instances, the operation has been undertaken in patients who were considered chronically ill with a minimal probability of improvement from other forms of therapy. The literature would indicate that, in a small percentage of psychotic cases of this sort, spectacular improvement has occurred, enabling the patients to return to a position of usefulness in society, and to be, at times, self sustaining. This percentage cannot be accurately determined, but a fair estimate would be in the neighborhood of 10 per cent. It may be further judged that another 15 or 20 per cent of patients who undergo prefrontal leukotomy are able to live a relatively happy life and be in part self sustaining. Probably 80 per cent of the patients subjected to this type of surgery become more contented and have a more satisfactory existence than before operation.

The mortality rate from the operation varies considerably from hospital to hospital but may be estimated as in the neighborhood of 3 to 4 per cent—less than that (i. e., 1 to 2 per cent) in those instances in which operation has been performed in a large series of cases and suitable preoperative and postoperative care is available.

The degree of defect that is produced by the operation is as difficult to estimate as are the benefits which follow it. The degree of impairment in psychologic functions is not easy to determine. Since many patients have been ill for years, it is difficult to decide how much of the loss is due to brain injury and how much is a consequence of the condition for which the operation was performed. Tests of general intelligence have not been found to be particularly revealing, perhaps because more specific functions are affected by the operative procedure. In the case of tests of concrete and abstract behavior (tests, that is, of the ability to break up a given whole into parts and to generalize from these parts) impairment occurs but its degree is slight. The Goldstein-Scheerer tests, for example, which measure such behavior, indicate a poorer performance following operation. Results from the Shipley-Hartford Retreat Scale do not permit an unequivocal evaluation of performance. A poor performance following leukotomy is often due to slowness of response and limited cooperation on the part of the patient. There is also a tendency for the patient to give answers which have little bearing on the problem as though, in his opinion, any response would be regarded as adequate.

As for personality tests, the results of the Rorschach test show a greater tendency for the patient who has a leukotomy to repeat responses (perseveration), and his responses are more stereotyped and conventional. However, in the use of color, which is a measure of emotional reactivity, there is greater freedom of response and less rigidity.

Clinical observations indicate that a variety of reactions which must be considered as defects may follow the operation. A carefree attitude, with euphoria, may be excessive for the best of personal relations. Apathy, lack of interest, procrastination, facetiousness, profanity, outbursts of temper and distractability are among other undesirable conditions which have been encountered. There is a distinct tendency for these unfavorable reactions to improve during the course of months fol-

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[1] Moniz, E.: Tentatives opératoires dans le traitement de certaines psychoses, Paris, Masson & Cie, 1936.

[2] Freeman, W., and Watts, J. W.: Psychosurgery: Intelligence, Emotion and Social Behavior Following Prefrontal Lobotomy for Mental Disorders, Springfield, Ill., Charles C Thomas, Publisher, 1942; Pain of Organic Disease Relieved by Prefrontal Lobotomy, Lancet **1**: 953, 1946; Psychosurgery During 1936-1946, Arch. Neurol. & Psychiat. **58**: 417 (Oct.) 1947.

[3] Note: Dr. Solomon was requested by the Veterans Administration to describe the rationale of the operation at somewhat greater length and in terms of pathologic physiology. He replied: "In my opinion such a discussion would of necessity be very theoretical and probably completely unsound. I would be better advised not to attempt it."

lowing the operation. The greatest concern is in relation to the loss of some of the important characteristics of personality integration, such as judgment, planning for the future, discrimination, laudable ambition, fine sentiments and creative imagination. These are factors that are not readily evaluated. From a practical point of view, one should be prepared for some defect in these functions when deciding on the advisability of leukotomy.

Convulsive seizures occur in from 4 to 10 per cent of patients who undergo operation. Usually only a few attacks are suffered, but occasionally a patient will have repeated seizures. The electroencephalogram is usually strikingly abnormal in those in whom seizures develop. Abnormalities are accentuated in the anterior regions of the hemispheres and are often focal, being more pronounced on one side than on the other. Focal abnormalities may, however, occur after operation in patients who have no seizures. A marked electroencephalographic dysrhythmia occurs in most patients immediately after the operation but tends to subside within three months. The persistence of abnormality, or the recurrence of abnormality, particularly focal, suggests an epileptic complication.

It may be concluded that leukotomy will lead to some degree of defect but, at the same time, that it is likely to produce results which are beneficial from the standpoint of total behavior. One must then balance the possible assets against the possible liabilities. This requires judgment in each case. No specific and definite rules can be given but only some general suggestions based on the collective experience to the present. This experience indicates the following:

1. Tension, apprehension, fear, concern, worry and agitation are greatly reduced or abolished.
2. Excitement, aggressive and assaultive behavior, emotional outbursts and ragelike exhibitions, although not infrequently intensified shortly after the operation, tend to diminish and disappear within a few weeks or months.
3. Paranoid ideas tend to lessen to the vanishing point or, if continued in an attenuated form, cease to lead to overt expressions.
4. Obsessive thinking becomes less distracting, compulsive actions no longer occur and ritualistic behavior ceases.
5. Long-standing hallucinations may lessen or may lead to a lessened response; only rarely do they disappear entirely.
6. Anergic states are occasionally transformed into states of greater activity but frequently are unchanged, or activity may even be reduced.

## SPECIFIC INDICATIONS FOR OPERATION

On the basis of the foregoing observations, one may discuss, seriatim, the several symptom complexes or disease categories in which leukotomy is to be considered.

1. *The Manic-Depressive Psychosis and Involutional Melancholia.*—Patients falling into the diagnostic groupings of manic depressive psychosis and involutional melancholia who have reached a state of chronicity and who have failed to recover after having the benefit of the best available environmental conditions, psychotherapy and convulsive shock therapy are good candidates for leukotomy. The question of when a chronic state with little expectation of recovery has been reached cannot be categorically decided. Psychiatric judgment of a high order is necessary. When it appears that recovery by other methods of treatment is unlikely, the operation may be said to be advisable.

2. *Obsessive-Compulsive Neurosis.*—Patients with obsessive-compulsive neurosis who have had this syndrome for several years, with an increasing intensity of symptoms progressing toward a state of incapacity, or who are quite incapacitated and wholly miserable, may be considered as candidates for leukotomy. However, one should be reasonably sure that the patient has had the advantage of the best psychotherapy that can be made available before advising operation. It should be borne in mind that obsessive-compulsive symptoms lasting no more than a year or two, with spontaneous remission, are of frequent occurrence; hence, one should not be precipitate in concluding that the patient will not undergo remission. The classic case for which leukotomy is the logical present day treatment is one that begins insidiously in puberty or early adolescence and progresses inexorably for years to incapacity in the middle or the late twenties or in the thirties.

3. *Schizophrenic Psychosis.*—The patients with schizophrenic psychosis are the most challenging of the several groups under discussion. At this stage of our experience with leukotomy and in the present state of our knowledge concerning patients with this diagnosis, a reasonable conservatism should be maintained. One need not be too pessimistic about the probable outcome. A considerable proportion of patients bearing this diagnosis recover or show remissions in the first year of illness, especially those with acute onsets which develop in the presence of a previously adequate adjustment. Convulsive shock therapy and insulin shock therapy, or both combined, add to the percentage of recovery and result in a satisfactory improvement rate.

Few patients, however, recover spontaneously after being ill for more than a year, and after a year of illness neither convulsive nor insulin shock therapies produce a large number of successful results. Certainly after two years of illness, the recovery rate for schizophrenic patients is low, reaching almost the vanishing point. Although there are exceptional patients who recover after two, three or more years of illness, it is unfortunately not possible to predict which will have this exceptional course. It may be assumed that after three years of illness the likelihood of recovery is exceedingly small indeed, and such patients may then be properly considered for leukotomy. Experience has shown that, when operation has been delayed until aften ten years of hospitalization, few patients have been sufficiently improved by it to be able to resume their place in the world outside the hospital. Somewhere, therefore, during the course of illness, there is a critical point before which the leukotomy is worth while and after which it is not advisable. This point in time probably varies with each patient and is therefore difficult to determine. How early in the course of a schizophrenic illness one is justified in concluding that a chronic state has been reached with little chance of recovery, either spontaneously or as the result of shock therapies or of available psychotherapy, is also difficult to state with any precision. In general, it may be stated that a patient ill with a characteristic schizophrenic syndrome who has failed to benefit from good environmental, psychotherapeutic and shock therapies has but a small likelihood of recovery without operative intervention. Somewhere after twelve or eighteen months of properly treated illness the best of psychiatric judgment should be utilized to consider the desirability of leukotomy.

In the present state of medical knowledge, it is not possible to give a definite statement as to the probability of improvement by leukotomy among the various classes within the schizophrenic group, but there are certain types of patients who appear to react more favorably to the operation than others. Patients with a great deal of emotional turmoil, with catatonic-like behavior patterns and with circumscribed paranoid trends appear to have a better prognosis if operated on than the patients with little energy, with little emotional turmoil and with a hebephreniac-like syndrome. Patients who have had a history of good adjustment prior to an acute onset of a psychosis appear to have better prospects postoperatively than those whose symptoms have developed insidiously on the basis of a poor life adjustment.

4. *Paranoid Psychoses.*—The best results from leukotomy are, as a rule, to be observed in patients suffering from paranoid psychoses. Those who are believed to be chronically ill, and in whom psychotherapy and other therapy appear to have failed, constitute a proper group to be considered for operation. Those patients whose paranoid systems are well organized and who maintain good contact with reality tend to make a good readjustment after the operation. On the other hand, persons, sometimes considered to belong to this group, who are disorganized in their thinking processes and subject to vivid and continued auditory hallucinations tend to have a less satisfactory outcome.

5. *Psychosis Associated with Organic Disease of the Brain.*—Patients whose psychosis is associated with organic disease of the brain appear to benefit seldom if at all from leukotomy. The experience with this group is not extensive but seems to indicate that the operative procedure, rather than improving the patient, tends to hasten deterioration. At present it may be said that, with one definite exception, the operation should not be performed on patients with organic disease of the brain; the exception is the patient whose psychosis appears to be related to chronic encephalitis. In this instance, considerable benefit is often to be expected.

6. *Epilepsy.*—As far as is known at present, prefrontal leukotomy does not materially affect the convulsive diathesis. There is, to be sure, a risk of the operation's producing a convulsive focus, but the risk is apparently no greater in patients who have epilepsy than in those who do not suffer from the disease. Perhaps further experience will prove that this statement is not entirely correct; at present, however, it appears that psychoses associated with epilepsy may be considered for operation on the basis of mental symptoms without undue concern about the convulsive diathesis.

7. *Psychopathic Personality.*—There seems to be no strong evidence or experience to prove that leukotomy will benefit the psychopathic person. There have been a few cases reported in the literature in which adverse behavior has been favorably affected, but the greater mass of evidence, small as it is, indicates that the procedure does not lead to better behavior either in the alcoholic addict or in the antisocial group. In fact, there is some evidence that patients with a bad psychopathic history may be even less inhibited after the operation and, therefore, worse in their social interactions.

8. *Intractable Pain.*—Leukotomy presents the possibility of affording relief to certain persons who suffer severe intractable pain, such as that caused by tumor masses, tabetic crises, trigeminal neuralgia and similar painful conditions. If less mutilating procedures are inadequate, leukotomy may well be considered.

9. *Physical Defect States and Suicidal Tendencies.*—Leukotomy may be advisable for psychotic patients who are poor risks for shock therapy or in whom physical overactivity is dangerous to life because of physical defects or such disorders as tuberculosis and heart disease. Similarly, patients with a strong suicidal drive for whom shock therapy is contraindicated may be proper candidates for this operation.

## OPERATIVE APPROACH AND TECHNIC

The operative approach and the technic to be used is a problem for decision by the neurosurgical group and will be discussed here only in the form of a few brief statements. Two definite technics are being widely used, namely, the closed technic advocated by Freeman and Watts and the open technic preferred by Drs. Lyerle, Poppen and Penfield. Partial lobectomies have recently been performed. One point of importance is that there is little uniformity among different operators as to the total amount of white substance cut or of gray matter destroyed. Similarly, it is probable that there is no uniformity as to the exact site at which the surgical destruction is imposed. Some studies have been reported which suggest that adequate benefit may be attained by cutting only the lower quadrants of the anterior frontal region. Some attempts have been made to study the differences which are attained by section made more anteriorly as compared with others made more posteriorly. As yet, however, sufficiently definite conclusions to permit standardization of operative procedure have not been reached.

## POSTOPERATIVE COURSE

The clinical course immediately following the operation varies according to the surgical technic utilized. There are, however, certain general effects that are rather uniform. Immediately following the operation, the majority of patients fall into an inert state in which they appear to be in deep sleep. This is not actually the case, for they are capable of immediate response to mild stimuli. The picture as presented is somewhat like that which characterizes epidemic encephalitis. Patients will show little movement, interest or attention for one, two or three days after the operation; then they gradually become more interested, more active and more alert. Usually the patients will be able to get out of bed on the third or fourth day. Occasionally a patient will insist on getting up the day following operation and will seem none the worse therefor. Uninary incontinence is almost uniform and often continues for several weeks, occasionally for much longer periods. The better preserved the personality is, the shorter does the postoperative incontinence continue. The more attention paid to the patient and the more insistence on his controlling his bladder, the quicker this problem is solved. In most instances, response to paranoid delusions is much diminished immediately following the operation. Many paranoid patients who have previously refused to talk with relatives become quite affectionate when visited. This, unfortunately, leads the relatives to feel that more complete success has been achieved than is actually the case. Many patients become exceedingly outspoken and no longer are considerate or contain within themselves their animosities, antagonisms or resentments. As a result they may become vituperative, use foul and obscene language and show resistance to any suggestions. This is usually a passing phase, although it may last for weeks or months and appears to be on the whole a good prognostic sign rather than the reverse. For several [illegible] many patients appear to be [illegible] are inclined to remain in [illegible] resist attempts to get them out of bed or persuade them into activity. This also is often a passing phenomenon but may last for a number of weeks. A tendency to overeat is frequently encountered. As a rule this is not the result of increased appetite but is due to a lack of judgment or feeling of satiation; if it is not corrected it will lead to excessive gain in weight. Following the operation, patients often become more sociable and more articulate, and it is possible to obtain a much better physician-patient relationship than could be obtained preoperatively.

### POSTOPERATIVE CARE

The problem of careful physical and psychiatric postoperative care is an extremely important one. Most observers believe that a final satisfactory outcome depends to no little extent on the skill used to rehabilitate the patient. However, just what constitutes the best general psychotherapeutic and environmental approach is not so clear. Some believe that returning the patient to his home environment as soon as possible is extremely beneficial, while others believe that a well-organized hospital regimen is preferable. The opportunity for definite psychotherapy is often afforded by continued hospitalization, and it seems probable, though it has not been proved, that this is of great value. For some patients, a minimum of attention in the environment of a large mental hospital, where they are not pushed too hard and where they can slowly take on responsibilities and be put to useful activities without being unduly pressed, appears to be most salutary. It would seem that in this regard, as in others, judgment directed to the individual needs of the particular patient will bring the best effects rather than a routine prescription of a regimented program which is similar for all patients. Complications often arise because of the situation at home. If, for one reason or another, there it no adequate home to which the patient can return, or if the situation at home is changed because of long absence or as a result of emotional and temperamental changes among the relatives, tragic situations may result. When the patient returns home the family need careful advice, continuing guidance and encouragement.

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**The First Official Weatherman.**—The first official meteorologic records in America were started April 2, 1814, when Dr. James Tilton, Physician and Surgeon General of the Army, directed Hospital Surgeons to record the weather. The best known meteorologist of the Medical Department is Surgeon Albert James Myer, of New York, who became the first Chief Signal Officer of the Army and founder of the Weather Bureau. Fort Myer, Virginia, is named after him. Surgeon Myer, while stationed in Indian country in 1858, made a study of the Indian system of signaling by beacon lights and smoke signals from mountain tops. His system proved of value in the Civil War. Professor Spenser Fullerton Bair, Secretary of the Smithsonian Institution, induced the War Department to allow Army surgeons to take on the duties of naturalists in their work in the early West. Some of the work of these Army surgeons is unsurpassed in the country's ornithologic history.—Release, Surgeon's General Office, July 1, 1949.

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# PROBLEM CASES OF TOXIC DIFFUSE GOITER TREATED WITH RADIOACTIVE IODINE

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Several investigators [1] have reported the successful use of radioactive iodine in the management of toxic diffuse goiter (Graves' disease). In the published reports, no particular emphasis has been given to this form of therapy in cases of hyperthyroidism in which complications exist due either to the underlying disease or to unrelated illnesses, and which therefore render surgical treatment an inadvisable or risky procedure. Surgical management of most cases of thyrotoxicosis has proved to be satisfactory, but in a few situations it carries a mortality risk or the danger of undesirable surgical complication or gives poor results. Among these surgically unsuitable situations are: (1) patients with multiple recurrences of thyrotoxicosis after previous adequate surgical removal of thyroid tissue, (2) patients with severe congestive heart failure, (3) patients with extreme emotional instability or frank psychosis and (4) patients with unusually severe toxicity difficult or impossible to control by antithyroid drugs or the administration of inorganic iodine preparations.

The purpose of this study is to report that such patients may be successfully treated with radioactive iodine. Eighteen patients with one or another of the aforementioned complications have been treated with radioactive iodine ($I^{131}$) and have been followed longer than one year. It is of interest that the majority of these patients were referred for radioiodine treatment by surgeons who felt that operation was not the treatment of choice or that it carried too great a risk.

### PROCEDURE

All patients were treated with carrier-free radioiodine, $I^{131}$, obtained from the uranium pile at Oak Ridge, Tenn. In early studies [2] mixtures of both $I^{130}$ and $I^{131}$ were used, but the material employed in our study contained no $I^{130}$. $I^{131}$ is the longer-acting isotope, having a half-life of eight days.

To insure maximum uptake of the radioiodine by the thyroid gland, all patients were placed on a low iodine diet and none were treated until the lapse of four to six weeks after any previously administered iodine. Complete medical and laboratory examinations, including plasma organic iodine determinations, were made of all patients preliminary to treatment. Careful follow-up records were kept. In brief the technic, which in most details is that of Soley and Miller,[1d] is as follows:

> The patient was given a small amount of $I^{131}$, usually 0.5 to 1.0 millicurie, in order to determine the uptake of the iodine by the thyroid gland. The material looks and tastes like water and is taken orally. Simultaneously, the same amount of radio-

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From the Cedars of Lebanon Hospital, Los Angeles.

Aided by grants from the Blanche May and Beaumont Trust Funds.

[1] (a) Hertz, S., and Roberts, A.: Application of Radioactive Iodine in Therapy of Graves' Disease, J. Clin. Investigation **21:** 624 (Sept.) 1942. (b) Hamilton, J. G., and Lawrence, J. H.: Recent Clinical Developments in the Therapeutic Application of [illegible] Radio-Iodine, J. Clin. Investigation **21:** 624 (S[illegible] E. M., and Evans, R. D.: The Treatment of [illegible] ioactive Iodine, J. A. M. A. **131:** 86 (May 11[illegible] H., and Miller, E. R.: Treatment of Graves' Disease with Radioactive Iodine, M. Clin. North America **32:** 3 (Jan.) 1948.

[2] Chapman and Evans.[1c] Soley, M. H.: Exophthalmos in Patients with Various Types of Goiter, Arch. Int. Med. **70:** 206 (Aug.) 1942.

iodine is placed in a 50-cc. vial and diluted to a total volume of 50 cc. This material serves as a standard for subsequent measurements of radioactivity. The patient returns for measurement within a forty-eight hour period. He sits comfortably in front of a shielded Geiger counter, the opening of which is 29 cm. from the thyroid gland, and the radiation emanating from the region of the thyroid gland is measured; this is the neck count. A count over the thigh is made in order to account for the radioiodine contained in the nonthyroid tissues, and this is subtracted from the neck count, thus giving the amount of $I^{131}$ taken up by the thyroid gland. The count of the standard is also determined at this time, and this is taken as 100 per cent; the factor of decay is thus eliminated.

Thus, the thyroid count divided by the count of the standard gives the percentage uptake of iodine by the thyroid gland. It has been shown that for average weight glands the normal thyroid does not take up radioiodine in excess of 30 per cent.[1d] The patients with untreated toxic diffuse goiter have shown uptakes ranging from 35 to 98 per cent. Previous studies[3] have shown that the thyroid uptake is maximal in forty-eight hours. In follow-up observations, usually at monthly intervals, further uptake studies were performed as a guide to adequate dosage. Because of previously reported radiation sickness, dosage was administered cautiously at first, but more boldly as it was found that no untoward reactions resulted. At present the total dosage required by any patient is a matter of clinical judgment. The patients in this study received total doses of $I^{131}$ ranging from 1.5 to 14.5 millicuries and averaging 5.3 millicuries. Even with the larger doses radiation sickness did not occur. Our earlier treated patients were often given radioiodine several times before a euthyroid state was reached, but, as experience has grown, the number requiring more than the initial calculated dose has greatly decreased.

*Summary of Results in 18 Cases of Complicated Toxic Diffuse Goiter*

| | | | Before Treatment | | | Treatment | | After Treatment | | | | | Comment | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case No. | Age | Sex | Estimated Thyroid Wt., Gm. | Basal Metabolic Rate | Plasma Iodine * | Total Dose $I^{131}$ Mc. | Initial Uptake in 48 Hours, Percentage | No. of Months Before Response | Final Basal Metabolic Rate | Final Plasma Iodine* | Final Uptake, Percentage | Final Thyroid Wt. | Complicating Factors | Final Result |
| 1 | 62 | F | 40 | +24 | 9.5 | 1.5 | 30.8 | 3.0 | +10 | ... | .... | 25 Gm | Coronary heart disease<br>Congestive heart failure | Complete remission |
| 2 | 55 | F | 40 | +60 | 11.6 | 2.5 | .... | 2.5 | − 1 | 6.1 | .... | Normal | Congestive failure<br>Thiouracil reaction<br>Paroxysmal tachycardia | Complete remission |
| 3 | 64 | M | 25 | +34 | 9.7 | 2.5 | 60.0 | 2.0 | − 2 | 4.4 | .... | Normal | Congestive heart failure | Complete remission |
| 4 | 65 | F | 30 | +39 | 13.0 | 2.0 | 83.0 | 3.0 | − 1 | 7.3 | 15.0 | Normal | Confusion<br>Depression<br>Withdrawal | Complete remission |
| 5 | 41 | F | 45 | +53 | 11.4 | 4.0 | 61.0 | 4.0 | −14 | 4.1 | ..... | Normal | Schizoid personality | Complete remission |
| 6 | 24 | F | 75 | +45 | 10.2 | 4.0 | 67.0 | 4.0 | .... | 6.5 | 29.0 | Normal | Schizoid personality | Remission |
| 7 | 74 | F | 25 | +90 | 14.0 | 11.0 | 37.0 | No response | .... | 15.4 | 47.0 | No change | Toxic adenoma | Unimproved |
| 8 | 33 | F | 90 | +47 | 20.0 | 14.5 | 78.0 | 8.0 | .... | 6.9 | .... | 35 Gm. | Extreme toxicity<br>Auricular fibrillation<br>Emotional instability | Control of toxicity<br>Psychosis with recovery<br>Sudden death |
| 9 | 30 | F | 75 | +70 | 14.0 | 13.0 | 97.5 | 12.0 | +31 | 8.4 | 45.0 | 35 Gm. | Chronic toxicity | Greatly improved<br>Able to work |
| 10 | 54 | F | 35 | + 8 | 9.0 | 4.0 | 46.0 | 2.5 | −12 | 6.3 | 12.7 | Normal | Surgical hemorrhage<br>Diabetes | Complete remission |
| 11 | 55 | M | 20 | +20 | 20.0 | 6.0 | 64.0 | 4.0 | +10 | 5.4 | 10.6 | Normal | Surgical recurrence<br>8 year chronic toxicity<br>Chronic fibrillation | Complete remission<br>Regular rhythm |
| 12 | 35 | F | 20 | +22 | 10.7 | 8.5 | 43.0 | 5.0 | .... | 5.6 | 37.0 | 20 Gm. | Surgical recurrence (2)<br>Roentgen therapy failure<br>Thiouracil failure<br>Cartilaginous-gland | Complete remission<br>Progressive moderate exophthalmos |
| 13 | 55 | M | 50 | +45 | 9.7 | 4.0 | 54.0 | 3+ | − 2 | 4.5 | 11.0 | 25 Gm. | Surgical recurrence (4)<br>Mild congestive failure<br>Auricular fibrillation | Complete remission after irregular treatment |
| 14 | 30 | F | 40 | +43 | 9.0 | 3.0 | 55.0 | 3.5 | − 2 | 2.7 | 7.0 | Normal | Surgical recurrence (2)<br>Roentgen therapy failure | Complete remission |
| 15 | 39 | F | 45 | +17 | 7.6 | 2.0 | 30.0 | 3.0 | − 2 | 5.5 | 19.6 | Normal | Surgical recurrence (2)<br>Roentgen therapy failure<br>Thiouracil failure | Complete remission |
| 16 | 39 | F | 20 | +15 | 9.0 | 2.0 | 31.0 | 3+ | .... | ... | .... | Normal | Surgical recurrence (4) | Moderately improved<br>Nodule disappeared |
| 17 | 62 | M | 45 | +18 | 13.0 | 7.0 | 48.0 | 4.5 | + 2 | 5.6 | .... | (Small nodule) | Surgical recurrence (2)<br>Chronic toxicity | Complete remission |
| 18 | 51 | F | 3 nodules | +26 (thiouracil) | 6.7 | 4.17 | 40.0 | 2.5 | −16 | ... | 14.0 | (Just palpable) | Thyroid malignancy | Complete remission |

* Micrograms per hundred cubic centimeters.

A total of 18 cases comprise the basis of this study (table). All but 1 have been followed from twelve to eighteen months. There were five types of complications: (1) congestive heart failure (3 cases), (2) extreme emotional instability or psychoses (3 cases), (3) extreme toxicity (3 cases), (4) recurrence of thyrotoxicosis after previous thyroidectomy (8 cases) and (5) thyroid malignancy (1 case).

## RESULTS

1. *Congestive Heart Failure.*—There were 3 cases in this group. In all there was a complete response to therapy with subsidence of toxicity and recovery from failure. One patient with associated coronary disease later had an acute myocardial infarction, from which she also recovered.

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[3] Hamilton, J. G., and Soley, M. H.: Studies in Iodine Metabolism of the Thyroid Gland in Situ by the Use of Radio-Iodine in Normal Subjects and in Patients with Various Types of Goitre, Am. J. Physiol. 131: 135 (Nov.) 1940.

The following case illustrates the excellent response to radioiodine therapy manifested by a patient with severe congestive failure (fig. 1).

Case 2.—E. B., a 65 year old white housewife, had been troubled with palpitation and nervousness for over two years. During the year prior to examination she suffered from shortness of breath on slight exertion and growing weakness. Sometimes dyspnea occurred at night, waking her from her sleep. In spite of an increased appetite, she had lost over 40 pounds (18 Kg.) in weight in six months.

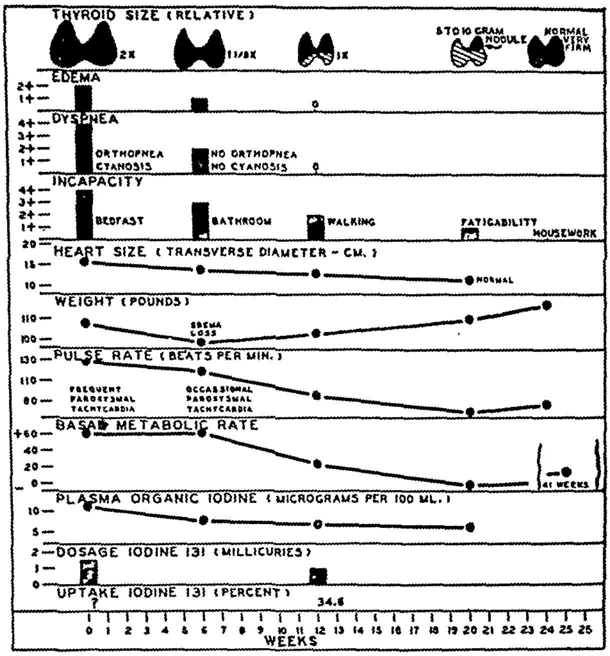

Fig. 1.—Illustrative case of thyrotoxicosis complicated by congestive heart failure (case 2). This 55 year old white woman was completely incapacitated with severe heart failure. Thiouracil had caused leukopenia, and she was considered too ill to withstand operation. Complete remission occurred following radioactive iodine therapy.

On Aug. 24, 1946, she had an acute episode of precordial pain, accompanied with dyspnea and cyanosis, requiring morphine for relief, and was hospitalized by her private physician because of acute left heart failure. An electrocardiogram showed an auriculoventricular nodal tachycardia, which was controlled with digitalis. A roentgenogram of the chest showed an increase in the transverse diameter of the heart with rapid forceful pulsations. There was moderate passive pulmonary congestion. No substernal thyroid gland was present.

An electrocardiogram, Sept. 2, 1946, showed a normal rhythm, with a rate of 90, and left ventricular strain. There was some peaking of the P waves. At this time an orthocardiogram showed a decrease in the heart size with clear lung fields. Further study now revealed a basal metabolic rate of + 65 per cent. She was given thiouracil, 0.2 Gm. twice daily. This was discontinued after two days because of a drop in the white blood cell count.

After this the patient's symptoms became more and more aggravated, and she was referred to a surgeon for removal of her thyroid gland but was considered too poor a risk for operation. She was therefore referred to Cedars of Lebanon Hospital for radioactive iodine therapy on September 30. Physical examination showed the temperature to be 98 to 99 F., height 65 inches (165 cm.), weight 108 pounds (49 Kg.). Her pulse rate varied from 110 to 130; her blood pressure averaged 120 systolic and 70 diastolic. She was poorly nourished, with evidence of severe weight loss. She was extremely apprehensive, and it was almost impossible for her to remain at rest. Eye examination showed loss of convergence, but no lid lag or proptosis. She was dyspneic, orthopneic and slightly cyanotic at bed rest. Her thyroid gland showed enlargement of the left lobe to about twice normal size. It was firm in consistency, and there was no bruit. The neck veins were prominent. Her heart was enlarged to the left, with a heaving apex impulse. There was a systolic precordial murmur of grade 2 intensity, loudest at the apex. A systolic gallop was present. The rhythm was regular. The heart tones were of fair quality. The skin was warm and moist, with flushed palms. There was a coarse tremor of the outstretched fingers, but no tongue tremor. There was edema (2 plus) of the ankles and legs. Laboratory examination showed a basal metabolic rate of + 61 per cent. The plasma organic iodine was 11.7 micrograms per hundred cubic centimeters. Circulation time was 27½ seconds with saccharin and 10 seconds with ether. The urine was normal except for a trace of albumin. Treatment with digitalis, 1½ grains (0.10 Gm.) a day, was continued and the patient was given a 5,000 calory low salt diet with phenobarbital, 1 grain (0.06 Gm.), three times a day, for sedation. On October 1, the patient was given 1.5 millicuries of $I^{131}$. No uptake studies were done, as the patient was too ill to be moved about.

The patient was discharged from the hospital and was subsequently followed up by her private physicians. Her basal metabolic rate on November 16 was + 62 per cent, but by November 25 it had fallen to + 24 per cent, and her cholesterol was 176.5 mg. Her plasma organic iodine had fallen to 8.0 micrograms per hundred cubic centimeters. A recheck roentgenogram showed decrease in the heart size with clear lung fields.

The patient was seen again on December 27, and her weight was now 102½ pounds (46.5 Kg.). She had had a further episode of the paroxysmal tachycardia in spite of the daily dose of digitalis, and the electrocardiogram still showed left strain. However, in the last month her dyspnea and edema had disappeared. She was able to sleep at night, ate well and was gaining strength. A nodule was still palpable on the left side of the neck.

On Jan. 5, 1947, 1 millicurie of $I^{131}$ was again administered. The thyroid uptake at 48 hours was 34.6 per cent. The patient returned for a check on February 14, at which time her weight was 110 pounds (50 Kg.) and her pulse rate 80. She felt strong, had more ambition, noticed increased strength in her legs and was no longer troubled with palpitation. All symptoms of congestive failure had disappeared. At this time, careful palpation of the thyroid gland showed the enlargement on the left side to have completely disappeared; however, a small 2 to 3 cm. nodule, weighing approximately 5 to 10 Gm., was palpated in the right lobe. Digitalis therapy was stopped. The

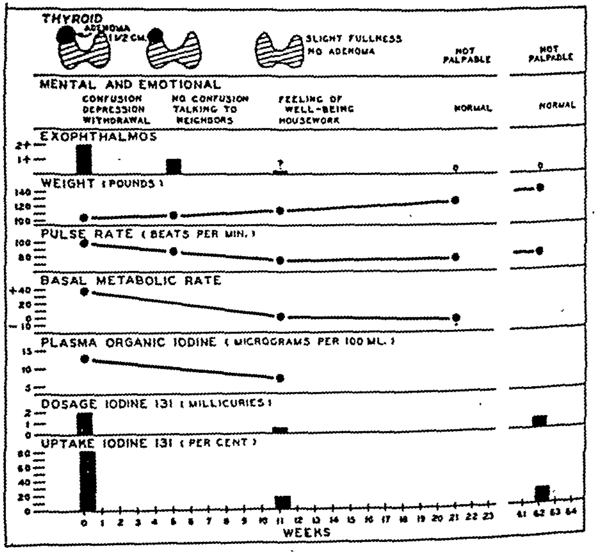

Fig. 2.—Illustrative case of a 65 year old Chinese woman with severe psychosis resulting from toxic diffuse goiter (case 4). Leukopenia occurred after treatment with thiouracil. There was only slight improvement with the administration of strong iodine solution. Her psychiatrist felt that she was a poor surgical risk because of her mental condition. After radioactive iodine therapy, her psychosis completely disappeared, and at the time of last examination, the patient appeared to be entirely well.

level of plasma organic iodine was 6.1 micrograms per hundred cubic centimeters, and her basal metabolic rate had fallen to — 1 per cent.

The patient was seen for the last time on March 18; her pulse rate was 88; her weight was 117 pounds (53 Kg.), and, in her own words, she "felt wonderful." She was symptom free. The thyroid gland showed diffuse slight enlargement of both lobes, rather firm in consistency, but there were no nodules.

2. *Extreme Emotional Instability or Psychosis.*—There were 3 cases in this category. Two of the patients had been referred to psychiatrists and were considered so unstable that their families were advised against surgical treatment. It was for this reason that they were referred for radioiodine therapy; both patients made a complete recovery, with return to mental health. The third patient, the mother of a physician, was frankly psychotic and made an excellent recovery following the administration of radioactive iodine (fig. 2). This last case illustrates the good response to radioiodine therapy encountered in this group.

CASE 4.—M. L., a Chinese woman aged 65, mother of a physician, was first seen on Jan. 3, 1947, with symptoms of loss of 30 pounds (14 Kg.), moderate exophthalmos, pronounced nervousness and recurrent diarrhea of 6 to 8 watery stools a day, all of three years' duration. She also suffered from attacks of palpitation with a feeling of increased heat. Her son, an ophthalmologist, noted prominence of the eyes on his return from overseas and found colloid retinal degeneration.

During this period she had changed from a cheerful, rather phlegmatic housewife to a depressed nervous person who was becoming more and more confused. She refused to do her work and would no longer receive her friends or speak to her neighbors.

A diagnosis of thyrotoxicosis was made, and she was given thiouracil in August 1946. This was discontinued after six weeks because of leukopenia. She also received strong iodine (Lugol's) solution with only slight improvement.

Examination in January 1947 showed a thin, depressed, agitated woman with a resting pulse rate of 100. With any excitement it would increase to 140 or over. Her blood pressure was 140 systolic and 70 diastolic. There were no cardiac abnormalities. There was exophthalmos (2 plus) with very poor convergence and decided lid lag. The fundi showed colloid degeneration. The thyroid gland was slightly full, but the only real abnormality was a firm adenoma measuring 1.5 cm. in diameter at the right upper pole. Except for tremor and warm moist skin, the results of the remainder of the physical examination were normal. The results of laboratory studies are shown in figure 2, as is the subsequent course following the administration of 2 millicuries of radioiodine. She made a rapid and complete recovery in three months, including the disappearance of all mental symptoms. The result of her last uptake study, on March 15, 1948, was 21.2 per cent, and she was still feeling completely well about fourteen months after radioiodine therapy had been instituted.

3. *Extreme Toxicity.*—In this group there were 3 cases. The poorest results in this series were obtained with these cases. Because of the difficulties encountered in this group each of the cases will be described in detail. One patient (case 7), who had a toxic adenoma, received 11 millicuries of $I^{131}$ without any therapeutic response. This was the only frank therapeutic failure in the series reported here.

CASE 7.—Mrs. M. N., a 34 year old white woman, first noticed thyrotoxic symptoms in Germany in 1935. At this time she noted palpitation, weakness, nervousness and weight loss. In a German concentration camp she lost 72 pounds (33 Kg.). She came to the United States in 1946, where a physician found her basal metabolic rate to be + 97 per cent, with a level of organic iodine in the plasma of 14.0 micrograms per hundred cubic centimeters. She was given iodine with considerable improvement, but remained chronically ill. Because of her age and the severity of her toxicity she was referred for radioiodine therapy on Feb. 3, 1947. Examination disclosed a very apprehensive and emaciated patient weighing 101 pounds (46 Kg.), 50 pounds (23 Kg.) under her normal weight. Her pulse was thready and the rate averaged 128. Her blood pressure was 170 systolic and 90 diastolic. There were no eye signs, but pronounced tremor of the tongue and extremities were present. The thyroid gland contained a small 1.5 cm. firm nodule in the right lobe but was not otherwise enlarged. The heart was not enlarged, but the tones were tic-toc in quality. Laboratory study showed a basal metabolic rate of + 90 per cent, a level of organic iodine in the plasma of 14.0 micrograms per hundred cubic centimeters and normal blood cell count and urine. The electrocardiogram showed flattened T waves in standard leads 1 and 4 CF.

On February 20, she was given 2 millicuries of $I^{131}$ with an uptake of 37 per cent. Another 3 millicuries were given in March, 1 millicurie in April and 5 millicuries in June—a total of 11 millicuries. The last thyroid uptake was 47 per cent. During these six months there was no real improvement. She had gained 8 pounds (4 Kg.), but auricular fibrillation had developed and she had a persistent pulse rate of 120 and remained excessively nervous and apprehensive. Also, the thyroid nodule, probably an adenoma, had not changed in size. She was advised to have the adenoma removed but refused. Therefore, she was given propylthiouracil and was making a gradual improvement when referred back to her family physician.

The second patient (case 8) was of unusual interest in that a slow but good therapeutic response was obtained by the administration of 14 millicuries of $I^{131}$ in the face of a severe degree of hyperthyroidism associated with a goiter estimated to be 90 Gm. in weight. After the patient became euthyroid, schizophrenia developed.

CASE 8.—Miss J. C., a 33 year old white woman, had been ill for four years beginning in 1942. On Oct. 6, 1946, the patient entered Cedars of Lebanon Hospital complaining of weakness, nervousness, palpitation, weight loss, swelling of the neck and dyspnea.

At the age of 14 she first noticed a diffuse swelling in the neck, which at that time was diagnosed as a simple goiter. In the ensuing years the goiter regressed, although the patient was conscious of swelling of the neck during menstrual periods. Until 1942 she felt fairly well, her average weight being 145 pounds (66 Kg.). She had been working very hard and noticed an increase in the neck size, weakness, decided nervousness, palpitation, protrusion of both eyes and loss of 20 pounds (9 Kg.). Occasionally she was aware of ankle swelling coming on in the evening. Her appetite was much increased; her skin was always moist and warm, and occasionally she suffered severe sweating. Dyspnea had been present for several months on slight exertion. In the previous two months she had noticed orthopnea and required the use of two pillows for sleep. In the previous year, also, her menstrual flow had become more scanty. Her family history was irrelevant, and review of symptoms revealed no further complaints.

Her past history was normal except that about six years previously she had had a "nervous breakdown." However, she had made a satisfactory recovery, and, while her appearance was unattractive and she remained unmarried, she was cheerful and got along well with her family and the neighbors. She was admitted at this time because of increase of symptoms and was to be prepared for operation.

Physical examination showed a well developed, fairly well nourished, apprehensive patient, weighing 127 pounds (58 Kg.). There was moderate exophthalmos of both eyes and pronounced lid lag. There was a tremor of the tongue, and the mucous membranes of the mouth were red and "beefy" in appearance. The girth of the neck was 13½ inches (34 cm.). There was diffuse enlargement of the thyroid gland, more pronounced on the right side, approximately three and a half times normal size with an estimated weight increase of about 75 to 100 Gm. The tumor was smooth and fairly firm, and over it could be heard a moderately loud blowing systolic and diastolic bruit. The lungs were clear. The heart showed questionable enlargement to the left with a forceful apex beat. Pulse was regular, with rate of 120 at rest. Blood pressure was 170 systolic and 70 diastolic, and there was a presystolic murmur at the apex. No thrill was present. The extremities were entirely normal except for slight pitting edema of the ankles.

The basal metabolic rate was + 46 per cent and, four days later, + 48 per cent. Plasma organic iodine was 20.0 micrograms per hundred cubic centimeters and cholesterol was 173 mg. per hundred cubic centimeters. The urine and blood cell count were normal. A roentgenogram of the chest showed moderate left ventricular hypertrophy with clear lung fields and no substernal thyroid. The electrocardiogram showed sinus tachycardia with some peaking of the P and T waves, but no other abnormalities. Circulation time with ether was 3 seconds and with calcium gluconate 9 seconds. The sedimentation rate was 6 mm. per hour.

The surgical consultant felt that the patient was too toxic for operation, and she was referred for radioactive iodine therapy. On Oct. 8, 1946, she received 1.5 millicurie of $I^{131}$ with an uptake in 48 hours of 77.7 per cent.

She was next seen on November 21. She weighed 141 pounds (64 Kg.), having gained 14 pounds (6 Kg.). She was still nervous, requiring barbiturates for sedation. Her eyes appeared less staring. Her menstrual flow was still scanty and somewhat delayed. Lid lag, tongue tremor and tachycardia were still present; the pulse rate averaged 140. The blood pressure was 210 systolic and 90 diastolic, and the neck measured 14 inches (36 cm.) in girth, the thyroid appearing essentially unchanged, and there was a loud bruit. On December 20, she weighed 144½ pounds (65.5 Kg.), and it was found that her plasma organic iodine was still 20 micrograms per hundred cubic centimeters. Diarrhea had been present from time to time, and her appetite was becoming poor. There was no real improvement. On Jan. 3, 1947, she was given 3 millicuries of $I^{131}$, with an uptake of 88 per cent. Recheck on January 31 showed auricular fibrillation at a rate of 125 to 150. Otherwise the electrocardiogram showed no remarkable changes. Digitalis therapy was started, but the heart rate could not be brought below 100 to 105, in spite of full digitalization. Her blood iodine was again determined and this time showed 21 micrograms per hundred cubic centimeters of plasma. In spite of vitamin therapy, her mucous membranes still showed evidence of severe avitaminosis. Ankle edema persisted; her weight dropped to 136½ pounds (62 Kg.), and she continued to be very nervous and apprehensive. It was felt that she had been given much too small a dose of radioiodine for the large amount of hyperplastic thyroid tissue present, and on February 20 she was given 5 millicuries of $I^{131}$, with an uptake of 98.6 per cent. On March 19, her weight was still 136 pounds (62 Kg.), the apical rate persisted at about 128 and there was no objective evidence of improvement except that the gland had become much firmer. On the following day, March 20, she was given 5 millicuries of $I^{131}$, with an uptake of 53.2 per cent. By April 14, definite evidence of improvement had appeared. Her weight was now 146½ pounds (66.4 Kg.). Her gland was very firm, but about two thirds of its previous size. The neck now measured 13 inches (33 cm.) in girth. Her strength improved, and she was doing a little housework. Her tremor was much less and protrusion of the eyes noticeably decreased. On April 29, her weight was 147 pounds (67 Kg.) and there was still fibrillation, but at the rate of 80 to 100 per minute. The gland was only one third of its former size, very firm and without a bruit. Her skin was dry, and ankle edema had disappeared. Her strength had returned. Exophthalmos was only slight, and her tremor had disappeared. However, in spite of the decided physical improvement, which was confirmed by a level of blood iodine of 6.9 micrograms per hundred cubic centimeters, she had become very panicky and felt that she was about to die and had appeared at the office to tell everyone "goodbye." She was therefore referred to a psychiatrist, who decided that she had a schizoid personality and that her symptoms were the result of her fear of getting well when she would no longer be an object of solicitude for her family and she would have to face reality again. Within a week hallucinations developed and she was institutionalized. For six weeks she was frankly psychotic and was treated with mild insulin shock. During this time, auricular fibrillation persisted and quinidine was given in moderate doses without effect. Right lobar pneumonia developed, but the patient recovered promptly with penicillin therapy and showed no evidence of heart failure. She was returned to her family in a clear mental state but was very unstable. At this time her thyroid gland was only slightly enlarged and very firm. She showed no evidence of toxicity. However, fibrillation continued. At this point she refused further care and dropped out of sight.

Three months later she died suddenly, while running to answer the door bell. She apparently had been sleeping, was startled by the bell, ran to the door and died on the way. She had been taking no medicine except digitalis, which she gave herself when her pulse rate became too fast. She had been doing the housework and gardening, had remained cheerful and showed no evidence of heart failure.

At autopsy the thyroid gland was small but very fibrotic. The heart was dilated and flabby, especially on the right, but there were no other lesions found in any of the organs. No definite cause of death was determined at necropsy.

The third patient (fig. 3) was interesting because of her decided toxicity, her failure to respond to many other forms of management, her inability to be prepared for operation, and her slow response to radioiodine therapy. At the time of last examination she had still not obtained a complete remission, but was decidedly improved, holding a job and troubled only by occasional attacks of palpitation. At the time of writing, treatment was still being continued, and it was felt that her initial treatment was too cautious. Radioiodine at least produced the greatest benefit of the many procedures tried.

Case 9.—Miss V. D'I, a 32 year old white woman, was first seen at Cedars of Lebanon Hospital in January 1946, with complaints of fatigue, dyspnea, nervousness and enlarging tumor in the neck for the previous eighteen months. In the preceding six months protrusion of both eyes developed. She had taken strong iodine solution for one to two months with moderate improvement and a gain of 12 pounds (5 Kg.) in weight.

Examination showed a fairly well nourished woman weighing 129 pounds (59 Kg.), very nervous, with exophthalmos (3 plus) bilaterally, slight edema of the lids, acneiform eruptions of the face, pronounced lid lag and poor convergence. Her skin was warm and moist, and there was a fine tremor of the extremities. Her pulse rate averaged 120 at rest, and her blood pressure was 170 systolic and 80 diastolic. The heart was normal except for a blowing apical systolic murmur, and there were no signs of congestive failure. The thyroid gland was soft, diffusely enlarged to about three times normal size, and there was a systolic bruit audible over it.

Laboratory studies revealed a normal blood cell count and normal urine. Plasma organic iodine was 11.0 micrograms per hundred cubic centimeters and serum cholesterol 256 mg. per hundred cubic centimeters. Several basal metabolism tests were made, and the rate averaged + 75 per cent. Results of tests of hepatic function were normal, and the electrocardiogram showed only sinus tachycardia. On fluoroscopic examination the heart appeared overactive.

The patient was given strong iodine solution, 30 drops daily. After one month this therapy was stopped because of lack of a satisfactory response, and in March she was given 6-propyl-2-thiouracil, 25 mg. three times a day. After eight months of therapy, with up to 200 mg. daily, there was no satisfactory response and the medication was discontinued. In October roentgen therapy over the gland was given when the propylthiouracil therapy was stopped. In January 1947, she was rehospitalized because of the continued severe toxicity and failure of therapy. She was exceedingly apprehensive and in constant motion. Her teeth had become carious. At this time her plasma organic iodine was 14.0 micrograms per hundred cubic centimeters and her pulse rate averaged 120, basal metabolic rate + 70 per cent, weight 118 pounds (54 Kg.) and serum cholesterol 201 mg. per hundred cubic centimeters. She was believed to be too toxic for operation and was referred by the thyroid committee for radioiodine therapy.

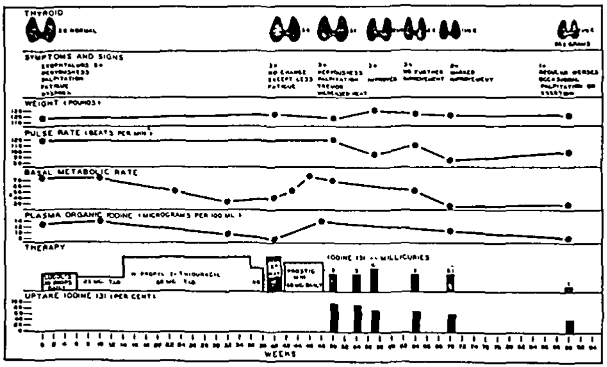

Fig. 3.—Illustrative case of a 32 year old white woman with severe thyrotoxicosis (case 9). She received fifty weeks of treatment with (Lugol's) strong iodine solution, propylthiouracil, roentgen rays and neostigmine (prostigmin®). During this fifty week period she was considered too toxic for operation and was therefore referred for radioactive iodine therapy. There was great improvement, and the patient was able to return to work. Although it is felt that this patient is not completely cured, radioactive iodine gave her more benefit than any other form of treatment.

On January 3, she received 3.0 millicuries of $I^{131}$, with an uptake of 97.5 per cent. On February 20, she was given 3.0 millicuries, with an uptake of 91.7 per cent. On April 17, she received 4.0 millicuries, with an uptake of 76.0 per cent. Her weight on April 22 was 132 pounds (60 Kg.) and pulse rate 96; she was less nervous and was felt to be improving. On June 24, she weighed 126 pounds (57 Kg.), her basal metabolic rate was + 54 per cent and her pulse rate 112. On July 19, she again received 3.0 millicuries, with an uptake of 74.4 per cent. On October 25, she was given 3.1 millicuries and her uptake was 62.4 per cent. The level of iodine in the blood on October 27 was 11.2 micrograms, and her basal metabolic rate was + 27 per cent. On November 25, she weighed 123 pounds (56 Kg.), her pulse rate was 86, her gland was much smaller and she felt much better. On December 23, she weighed 120 pounds (54 Kg.), her pulse rate was 78 and she felt fine. On March 12, 1948, she received 1.0 millicurie and her uptake was 44.7 per cent. The level of iodine in the blood at this time was 8.4 micrograms, and the basal metabolic rate was + 31 per cent. On March 15, her thyroid gland weighed approximately 35 Gm., her pulse rate was 100 and she weighed 123 pounds (56 Kg.). She was getting along without sedation, her menstrual periods were regular and she noticed only occasional palpitation on exertion. She was not working at this time. At the time of last examination, she was still not cured but was decidedly improved, holding a job and troubled only by occasional attacks of palpitation. Treatment is still being continued. It is felt now that her initial treatment was too cautious. Radioiodine at least produced the greatest benefit of the many procedures tried.

Thus, in this group of 3 cases, a complete remission of the thyrotoxicosis was attained in 1 case, a partial remission in another, and no improvement was obtained in the third.

4. *Recurrence of Thyrotoxicosis After Previous Thyroidectomy.*—Eight cases comprised this group. Four of the patients suffered recurrence of hyperthyroidism after two operations and 2 patients relapsed after each had undergone four thyroidectomies. Three patients in this group had failed to respond to previous courses of therapy with both thiouracil and deep irradiation over the thyroid gland. There were 2 patients who had recurrences after one previous thyroidectomy. One of these (case 10) had hemorrhaged so severely after hemithyroidectomy that further surgical treatment was abandoned and she was referred by her surgeon for completion of treatment with radioiodine. The other patient (case 11) had undergone operation eight years previously with prompt return of symptoms followed by a chronic course of moderate thyrotoxicosis with auricular fibrillation. A state of extreme malnutrition had developed, and the patient had escaped congestive failure by greatly limiting his activities and dosing himself with iodine from time to time. A patient, L. K. (case 12), was referred by her surgeon not only because of recurrence after two previous operations but because the remaining thyroid tissue was cartilagenous in consistency and it was felt not to be amenable to further operation. With treatment her toxicity was completely controlled and the thyroid tissue softened and nearly disappeared. However, her right eye began to show progressive exophthalmos, the only patient in our series whose exophthalmos became worse. At the time of writing, the exophthalmos was improving with thyroid medication.

The following case illustrates the excellent response to radioactive iodine of a patient with severe thyrocardiac disease who had had four recurrences of thyrotoxicosis following as many subtotal thyroidectomies (fig. 4).

CASE 13.—W. W., a 55 year old white man, had thyrotoxicosis while in the Navy, and a thyroidectomy was performed in 1930. Because of recurrences of hyperthyroidism he had three more thyroidectomies, in 1931, 1932 and 1944. He was improved only a few months following the fourth operation and entered Cedars of Lebanon Hospital in November 1946 complaining of recurrence of nervousness, dyspnea, palpitation, increased heat and swelling of the ankles, for which he had been given irregular medication with digitalis.

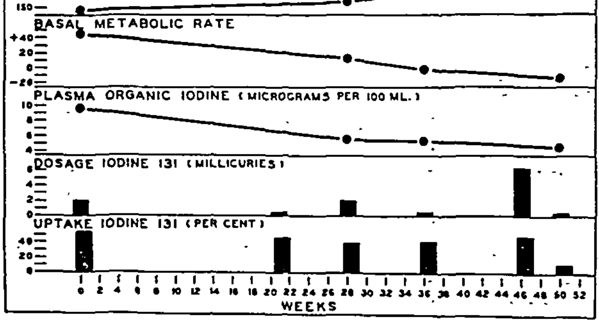

Fig. 4.—Illustrative case of recurrence of thyrotoxicosis following four subtotal thyroidectomies. The patient had refused a fifth operation (case 13). This case was complicated further by congestive heart failure. Following the administration of radioactive iodine, the cardiac decompensaton completely disappeared and the patient, at the time of last examination, appeared to be entirely well. (FBD is fingerbreadths.)

Physical examination revealed moderate dyspnea and orthopnea; the pulse rate was 160 and irregular; the blood pressure was 130 systolic and 80 diastolic. Exophthalmos was questionable. However, the thyroid gland contained a walnut-sized nodule in either lobe, an estimated total weight of 50 Gm. At irregular intervals the cardiac rhythm was irregular. There were moist rales in the lung bases, and the liver was enlarged 2 fingerbreadths below the right costal margin. However, the extremities showed no edema or tremor.

Laboratory study showed the basal metabolic rate to average about + 45 per cent, plasma organic iodine 9.7 micrograms per hundred cubic centimeters and serum cholesterol 188 mg. per hundred cubic centimeters. The electrocardiogram showed an auricular flutter with an auricular rate of 315. A roentgenogram of the chest revealed normal cardiac silhouette and clear lung fields. The patient was digitalized, but the rate could be slowed to only 90. At this time the electrocardiogram revealed auricular fibrillation. The patient refused surgical treatment, and he was first given 2.0 millicuries of $I^{131}$ in February 1947, retaining 54 per cent in the thyroid gland after 48 hours. By May his basal metabolic rate was + 12 per cent and plasma organic iodine 5.5 micrograms, and he felt somewhat improved. He was given another 2.0 millicuries, this time with a 39 per cent uptake. His gland was only slightly enlarged, and no nodules were palpable. His pulse rate was 86. He was still very nervous. No evidence of heart failure was present, and he stated that he "rarely took digitalis." In September, a tracer dose still showed an uptake of 40.6 per cent, but his basal metabolic rate was — 2 per cent and blood iodine 5.3 micrograms. The gland was only slightly enlarged; the pulse rate was regular at 80; he had gained 10 pounds (5 Kg.) and stated that he felt very well. The last uptake study was done on March 15, 1948 with a reading of 11.2 per cent, and at this time the patient felt well. His plasma iodine was 4.5 micrograms.

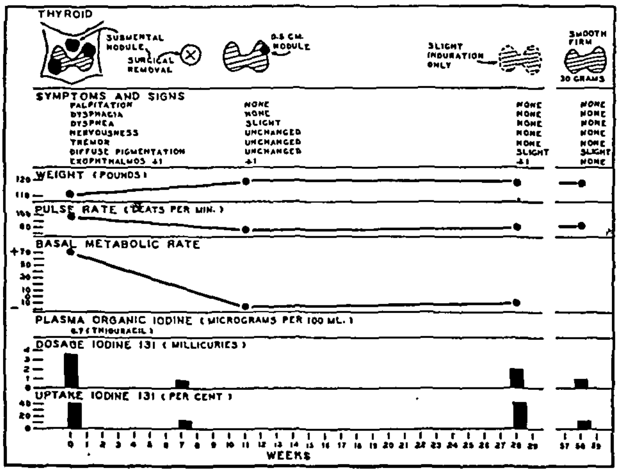

Fig. 5.—Illustrative case of a 51 year old woman with functioning *papillary adenocarcinoma of the thyroid with hyperthyroidism (case 18).* She had had three recurrences following operation and roentgen therapy. After the use of radioactive iodine there was a prolonged remission of the hyperthyroidism and the nodules in the gland, presumably malignant, were no longer palpable.

In this group, therefore, all patients previously shown to have recurrences after two to four operations, had been restored to a euthyroid state and had so remained for twelve to eighteen months. Whether the rate of recurrence in this group after radioiodine therapy will be as high as after surgical treatment remains to be determined. At least radioiodine is a useful method of treatment in this type of problem.

5. *Thyroid Malignancy.*—Several cases of thyroid malignancy treated successfully with radioiodine have been reported, but the great majority of patients do not respond, largely because malignant tissue only rarely retains radioiodine in therapeutic quantities. Only 1 patient with thyroid malignancy has been treated in our series. The history was unusual, since the histologic diagnosis of carcinoma of the thyroid gland was first made in 1927 when the patient presented herself to her physician with signs and symptoms of thyrotoxicosis. She subsequently had three thyroidectomies because of recurrence of thyrotoxicosis. Each time the histologic diagnosis of the removed thyroid tissue was "papillary adenocarcinoma of the thyroid." She was seen by us in 1947 because of another recurrence of hyperthyroidism. Moreover, a metastatic nodule in the neck was found. No other metastases were found. Treatment consisted of a combination of surgical removal of the metastatic nodule and the administration of radioiodine with consequent remission of the thyrotoxicosis. The details of this case (fig. 5) follow:

Case 18.—Mrs. H. Q., a 51 year old white woman, was first seen on Dec. 16, 1946, complaining of recurrent goiter. She had been cared for by Dr. Charles T. Sturgeon of Los Angeles since the onset of the disease in 1925. Her original symptoms were characteristic of thyrotoxicosis: weakness, loss of weight, tachycardia, nervousness, nausea, stiffness of the leg muscles, tremor, sweating and enlargement of the thyroid. A goiter had been present in the neck in the form of a 1 cm. nodule since the age of 16 but had given no trouble until the patient was 25 years old, when it rapidly increased in size to the accompaniment of the aforementioned symptoms. A subtotal lobectomy was performed on June 8, 1925. The left lobe contained a large nodule 4 cm. in diameter and several smaller nodules. The right lobe appeared normal. Diagnoses from section of the tissue were: (1) toxic adenoma of the thyroid and (2) papillary adenocarcinoma of the thyroid.

Dr. Sturgeon reported that the patient made an excellent recovery and was not seen again until Oct. 28, 1934, when there was a recurrence of the symptoms present in 1925, with enlargement of the right lobe of the thyroid. He stated that the patient had severe hyperthyroidism.

In 1927 the diagnosis was hyperthyroidism, and the patient underwent subtotal thyroidectomy. Pathologic study revealed a papillary adenocarcinoma. The slides were reviewed by Dr. Roy Hammack of Los Angeles and by Dr. Broders of the Mayo Clinic, and they concurred in the diagnosis. At this time the patient also received extensive irradiation of the gland. She remained well until October 1934, when she again showed hyperthyroidism with enlargement of the right lobe and pronounced exophthalmos for the first time. On this occasion Dr. Sturgeon performed an "almost total thyroidectomy." Again the diagnoses from pathologic study were: (1) hyperplastic goiter and (2) papillary adenocarcinoma of the thyroid. She was given an extensive course of roentgen therapy.

In 1936 a small nodule recurred in the scar and was removed. In 1937 a 2 cm. nodule was removed from the left breast. Tissue study showed no malignancy. In 1946 the patient was under the care of Dr. Matousek of Glendale, Calif. She had consulted him for rapid irregular heart action, choking feelings, difficulty in swallowing, a feeling of warmth to burning with decided itching, severe dyspnea on exertion, weight loss, nervousness and lumps in the side of the neck. Two basal metabolism tests showed elevated values of + 85 per cent and + 65 per cent. On Oct. 15, 1946, treatment with thiouracil, 0.6 Gm. daily, was started. By December 6 her basal metabolic rate had fallen to + 26 per cent and she felt improved.

Review of the past history further revealed that she had had some type of tumor of the navel removed fifteen years previously. There was a high incidence of cancer in the family, and her mother had had a goiter.

Physical examination showed a small, well developed, undernourished white woman. Her face was thin, with a staring expression due to the slight exophthalmos, and there was a striking dusky blue pigmentation of the skin of the entire body which had been noticed for about a year. Lid lag was pronounced, and convergence was impaired. The lips were cyanotic or pigmented. Three discrete 2 by 3 cm. nodules were present in the neck. The largest was in the submental space in the midline and was not attached to the thyroid gland. The other two were on each side of the trachea in the thyroid area. All were discrete, firm and visible as well as palpable. Old operative scars were, of course, present. Dry rales were heard in both apexes. The heart was slightly enlarged to the left and the rhythm regular. There were systolic murmurs both at the pulmonic and mitral areas. Except for a slight tremor of the outstretched fingers, the results of the examination were otherwise normal.

Laboratory study showed: hemoglobin 80 per cent, red blood cells 4,460,000 and white blood cells 7,300, with 70 per cent polymorphonuclear cells, 28 per cent lymphocytes and 2 per cent transitional forms. The electrocardiogram showed sinus rhythm, with no remarkable changes except that the P waves were peaked. The plasma organic iodine was 6.7 micrograms per hundred cubic centimeters and phosphatase (alkaline) 6.4 Bodansky units.

On Jan. 3, 1947, thiouracil therapy having been discontinued on Dec. 25, 1946, she was given 1 millicurie of $I^{131}$, with retention of 40.5 per cent. This amount was used only as a tracer dose, and on January 8 she was given an additional 2.4 millicuries.

On February 11 she was much improved. She had gained 4 pounds (2 Kg.), was no longer dyspneic and did not have palpitation. Her nervousness had decreased. However, there were no changes in the eye signs. The nodules were unchanged. On February 20 she was given 0.77 millicuries, with an uptake of only 6.7 per cent.

Examination on March 19 showed that she had continued to gain weight, had a pulse rate of only 76 and "continued feeling better." However, she was still nervous. Early in March 1947 Dr. Sturgeon removed the submental nodule. Study of this tissue showed: chronic thyroiditis, a few focal areas of hyperplasia and definite evidence of malignancy. An uptake study on the surgically removed tissue gave a value of 1.7 per cent; the tissue weighed 2.65 Gm.

The most remarkable change in the patient was that the nodule on the right had completely disappeared and the one on the left was just palpable. The body of the gland could be faintly outlined now because of its firm character. The basal metabolic rate was now —16 per cent. Her improvement was followed until August, when she was given another 3.5 millicuries, this time with an uptake of 42 per cent. However, no real thyroid enlargement was palpable in the neck, her pulse rate was 80 and weight 118 pounds (54 Kg.) and all her symptoms had disappeared except flushing, which was attributed to menopausal changes. She stated that she felt better than she had at any time in the previous twenty-three years. A final uptake study was made on March 15, 1948, which gave a value of 14.1 per cent. She looked and felt well, and the pigmentation of the skin had largely disappeared.

## COMMENT

The treatment of simple toxic diffuse goiter with modern surgical technic is eminently satisfactory. Good results have been reported with high voltage roentgen therapy[4] and more recently with thiouracil and other antithyroid drugs. This report points out that certain severe conditions unsuitable for surgical treatment or some conditions that fail to respond to antithyroid drugs, as well as high voltage roentgen therapy, have been successfully managed (in 16 out of 18 cases) with radioiodine. It is extremely dubious whether any other mode of treatment would have offered such good results in this group of patients. We have also treated 26 patients with uncomplicated toxic diffuse goiter with results similar to those reported by others.[5]

In addition to its therapeutic efficacy, it should be pointed out that radioactive iodine therapy would appear to have several other advantages:

1. The lowest reported mortality rate in thyroid surgery in the postoperative period is 0.5 per cent,[4] but the rate in most institutions is probably higher. There has been no death as a direct result of the therapeutic use of radioiodine.

2. Radioiodine can be administered to the ambulatory patient without loss of time from work. As compared with antithyroid drugs, the patient does not need repeated blood cell counts and daily medication, nor is he subjected to the risk of granulocytopenia. Even with propylthiouracil, reactions are reported in 1.6 per cent of the cases.[6]

3. Although radiation sickness has been reported, this has occurred only with larger doses of $I^{130}$, and we have not observed this untoward reaction in our patients.

4. The cost to the patient of treatment with radioactive iodine is much less than the cost of operation.

5. The administration of radioactive iodine is not followed by such complications as hypoparathyroidism, severe thyroid storms, postoperative pneumonia, shock, granulocytopenia, laryngeal paralysis, cosmetically unsightly scars and emotional strain of a major surgical procedure.

6. So far, evidence points to a decreased incidence of progressive exophthalmos with radioactive iodine therapy as compared with its incidence with surgical treatment.[3]

The disadvantages of radioactive iodine therapy are:

1. The correct dosage of radioactive iodine is not accurately known. As a result, in some cases many months of treatment are necessary before there is a remission. In other cases too much radioiodine has been administered with resulting hypothyroidism. With further experience it should be possible more accurately to gage the dosage so that the number of inadequately treated and overtreated patients will be reduced.

2. There are certain unknown dangers from radiation. Although no complications have as yet been seen in our cases or reported in the literature, the theoretical possibility exists that some dangers may be present.[7]

3. With surgical treatment the histologic changes of the gland can be accurately appraised. The pathologic changes, of course, can only be surmised without removal of the gland.

4. A certain amount of technical skill and apparatus is required to administer $I^{131}$ properly and safely.

5. Radioiodine has been used only since 1941; it is a relatively new form of treatment, and unforeseen difficulties may occur as in any new form of therapy.

## SUMMARY

Radioactive iodine was used in 18 problem cases of severe toxic diffuse goiter (Graves' disease). There were five classifications of complications: (1) congestive heart failure (3 cases), (2) extreme emotional instability or psychosis (3 cases), (3) extreme toxicity (3 cases), (4) recurrence after previous thyroidectomy (8 cases) and (5) thyroid malignancy (1 case).

Of the 18 patients, 16 were brought to a euthyroid state. One died of unknown cause several months after complete remission; 1 patient still had mild toxic symptoms, although greatly improved, at last examination, and in only 1 patient was there frank therapeutic failure.

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[4] Soley, M. H., and Stone, R. S.: Roentgen Ray Treatment of Hyperthyroidism, Arch. Int. Med. **70**: 1002 (Dec.) 1942.

[5] Prinzmetal, M.; Agress, C. M.; Bergman, H. C., and Simkin, B.: The Use of Radioactive Iodine in the Treatment of Graves' Disease, California Med. **70**: 1 (April) 1949.

[6] Bartels, E. C.: Thiouracil and Allied Drugs in Hyperthyroidism, New England J. Med. **238**: 6 (Jan. 1) 1948.

[7] Soley and Miller.[1d] Radioactive Isotopes, editorial, J. A. M. A. **136**: 696 (March 6) 1948.

# MEDICALLY PRESCRIBED EXERCISES FOR NEUROPSYCHIATRIC PATIENTS

## The Veterans Administration Program

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AND
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Today, as medical progress continues to record advancement in the prevention, diagnosis and cure of disease, psychiatric illness has become the primary medical problem of the nation—indeed, even of the world. Physical medicine as a specialty is so closely associated with psychiatry in the rehabilitation and restoration of mental patients that their objectives are almost synonymous. Physical medicine, like psychiatry, is a social as well as a medical science concerned with the patient's recovery, then his adjustment to family and community and finally his economic independence.[1]

Burlingame[2] has stressed the importance of physical medicine in aiding the psychiatrist in restoring psychiatric patients to society. Hawley[3] pointed out the rehabilitation potentials of psychotic patients. Blain[4] emphasized the importance of activity rehabilitation measures in the restoration of patients with chronic mental illness and in aging patients with mental disorders.

The Physical Medicine Rehabilitation Service in neuropsychiatric hospitals of the Veterans Administration consists of five component sections: physical therapy, occupational therapy, corrective therapy, manual arts therapy and educational therapy (fig. 1). These treatment technics are essential to the total recovery program, and this specialty is a service to the psychiatrist in development of therapeutic objectives for mental patients. The Chief of the Physical Medicine Rehabilitation Service is a qualified physiatrist and, in many neuropsychiatric hospitals, is also certified in the neuropsychiatric field. The same organizational setup is available to the psychiatrist in the neuropsychiatric units of general medical and surgical hospitals.[5]

The role of corrective therapy in the neuropsychiatric hospital will be outlined and some notation made of current progress. The Baruch Committee on Physical Medicine, in its plan for organization of rehabilitation staffs and centers, stated that the

> . . . physical medicine branch should be divided further into three sections: the section on occupational therapy, the section on physical therapy and the section on physical education.[6] The Veterans Administration has accepted this policy and, similar to Army Physical Reconditioning, has organized a section on physical activities designated as Corrective Therapy. Previous to World War II physical exercise was a part of hospital treatment in Veterans Administration Neuropsychiatric Hospitals, but was organized on a purely group, diversional level. With the organization of the Corrective Therapy program in the Veterans Administration by Covalt, these activities for the first time became organized on an individual medically prescribed basis as part of the total therapeutic plan in Physical Medicine Rehabilitation, and as such are coordinated with physical therapy, occupational therapy, and the other sections. This change merits further explanation in that the earlier plan utilized physical exercise as a diversional group program coordinated with, but not an integral part of, the medical service. As Corrective Therapy is now developed in the Veterans Administration, it is directly under the doctor, the physiatrist and the psychiatrist, as a prescribed medical activity to be administered in accordance with the prescription. Rusk, in his Convalescent Army Air Forces program, described this transition, "Exercises by the numbers as given in mass calisthenics during the soldiers' early military training are now replaced by personalized, prescribed activity and reconditioning procedures."

Rusk,[7] Barton[8] and Thorndike,[9] as well as many others, having seen the beneficial results of convalescent activity programs for neuropsychiatric patients, have included this phase as a part of state, civilian and university hospitals and teaching programs.

Attention is called to the developing relationships between the rehabilitation of neurologic and other neuropsychiatric patients. One of the earliest significant accomplishments was the effective rehabilitation of several chronic neurologic patients at the Minneapolis Veterans Administration Hospital, in which corrective therapy made a significant contribution. Brown[10] observed, "Probably of all medical conditions, the chronic neurologic disorders have for years been the most completely neglected." He showed from his study that the success with the individual patient was not directly proportional to the chronicity of the condition, but that patients hospitalized up to twenty years, many of them bed patients, could be rehabilitated and discharged from the hospital.

It is our belief that similar results may be attained in the rehabilitation of psychiatric patients. The patient falling into a passive daily routine of institutional life may easily become chronic. As Blain[11] explained, "Here it has been easier to lie down in the fight. After most therapeutic weapons have been tried, doctors and others become discouraged, not knowing what to turn to next. We have to change the attitude which has been handed down to us from time immemorial that chronic mental patients are essentially hopeless." With greater concentration on the chronic group, reports of a recent month showed that out of 5,500 discharged patients from neuropsychiatric hospitals where we have activity programs, 1,400 were World War I veterans, averaging 54 years of age and averaging more than five years in the hospital. This points to the need for augmented "total push" methods in our neuropsychiatric hospitals.

### PERSONNEL

The present patient load in neuropsychiatric hospitals, the future load based on past experience and the large number of World War II veterans offer one of the greatest challenges in Veterans Administration medicine (fig. 2). On May 4, 1948, there were 53,079 neuropsychiatric patients. It has been estimated that this load would increase to 122,000 by the peak year of 1965. There are about 400 corrective therapists in

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From the Department of Medicine and Surgery, Veterans Administration, Washington, D. C.

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[1] Krusen, F. H.: The Future of Physical Medicine, J. A. M. A. **125**: 1093 (Aug. 19) 1944.

[2] Burlingame, C. C.: Psychiatric Sense and Nonsense, J. A. M. A. **133**: 971 (April 5) 1947.

[3] Hawley, P. R.: Neuropsychiatric Program of the Veterans Administration, Mil. Surgeon **99**: (Dec.) 1946.

[4] Blain, D., and Baird, J. H.: The Neuropsychiatric Program of the Veterans Administration, Am. J. Psychiat. **103**: 463 (Jan.) 1947.

[5] Knudson, A. B. C.: Medical Rehabilitation Program of the Veterans Administration, Mil. Surgeon **100**: 323 (April) 1947.

[6] Report of the Baruch Committee on Physical Medicine, New York, 1946.

[7] Rusk, H. A.: Convalescent Care and Rehabilitation in the Army Air Forces, M. Clin. North America **29**: 715 (May) 1945. Rusk, H. A., and Voldeng, K. E.: Physical Medicine in the Army Air Forces Convalescent Hospital, Arch. Phys. Med. **26**: 766 (Dec.) 1945.

[8] Barton, W. N.: [illegible] Neuropsychiatric Patients, Bull. Menninger Clin. **8**: 138 [illegible]

[9] Thorndike, A.: [illegible] World War II: Analysis of 60[illegible] New England J. Med. **238**: [illegible]

[10] [illegible] of Neurological Rehabilitation, Minneapolis, Minn., Veterans Administration Hospital, November 1947.

[11] Blain, D.: Priorities in Psychiatric Treatment of Veterans, Mil. Surgeon **102**: 85 (Feb.) 1948.

Veterans Administration hospitals selected from 20,000 reconditioning personnel, of which about one fourth are concerned with psychiatric patients. These corrective personnel have a minimum degree of Bachelor of Arts or Bachelor of Science in physical education and have had specialized courses of instruction in psychiatric applications at the Veterans Administration Hospital, Topeka, Kansas, under Dr. Karl Menninger. They are supplemented by volunteer workers. In view of this, we find it advisable to develop our rehabilitation program for mental patients in accordance with the stated priorities outlined by Blain.

### BASIC CONCEPTS IN CORRECTIVE THERAPY

The fundamental concepts underlying the organization and execution of the corrective therapy program may be stated as follows.[12] Exercises are considered to have a distinctive effectiveness in meeting the emotional needs of the patient. The value, however, depends on the ability of the therapist to modify these exercises and to produce activity situations which will attract the patient into improved social adjustment. The major interest is not in the development of exercise per se, but in its integration into a total situation in which the patient is willing to accept a higher level of socialization. In this motivated environment the therapist is able to create most effective interpersonal relationships. The patient's hostility should be met without counterhostility on the part of the therapist. He must attempt to penetrate through activity the patient's mutism, rigidity, apparent obliviousness and other psychiatric symptoms. To accomplish this the therapist must have the competence, achieved through training and experience, to comprehend the significance of different types of symptoms and to realize the requirements of his role as a corrective therapist. The corrective therapist should develop a favorable therapeutic rapport with the patient, thus establishing a usable transference, which will permit progression to higher activity.

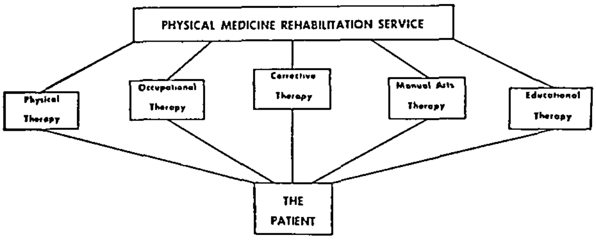

Fig. 1.—Organization of physical medicine rehabilitation service in the hospital.

The corrective therapist must follow no rigid rules of applying activity, but should "individualize" as much as possible. There should be a constant readjustment of activities as the patient progresses. A proper therapist-patient relationship at all stages of activity is important; the therapist always striving to represent the external environment. It is generally agreed that there is no more natural situation in which the individual may express his spontaneous and natural behavior than in exercise, especially a play situation. Here the corrective therapist can help in formulating ideas regarding the patient's behavior patterns and personality trends that resulted in maladjustments prior to the onset of mental illness.

Corrective therapy procedures, as a part of the total treatment plan, have proved helpful in the allaying of anxiety, the easing of rigidity, the lessening of inhibitions, the establishing of good rapport, lessening distractibility, resolving feelings of inferiority and overcoming negativism. Reassurance and desensitization of the ego is favorably influenced by physical participation in competitive and social types of exercise.

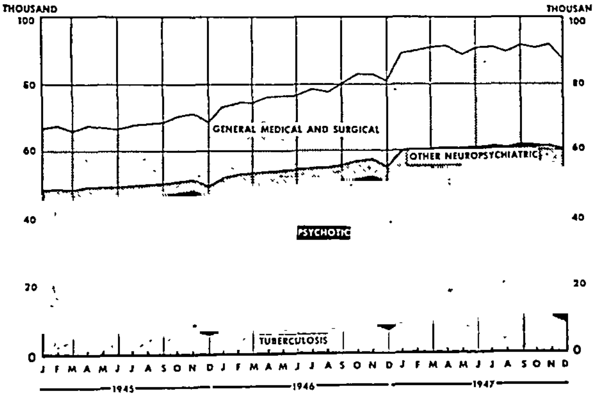

Fig. 2.—Graph of patients remaining in Veterans Administration hospitals, by type of disorder (tabulations made at the end of each month), 1945-1947.

It is frequently instrumental in awakening the will to recovery and in developing cooperation on the part of the patient. It has been noted that the active and often the voluntary element is significantly developed, thus emphasizing the principle that the patient's participation in activity forms a conspicuous contribution, both on physiologic and psychologic lines. Corrective therapy may therefore be considered a valuable adjunct to psychotherapy. It should be emphasized that active exercise is the most commonly used form of corrective therapy as applied to psychiatric patients.

It is considered important to survey and evaluate these situational activities and their various modifications as a dynamic, socialized, individual approach for improvement and possible rehabilitation of mental patients. Present empiricism has been due to a lack of time in a new program for controlled scientific evaluations.

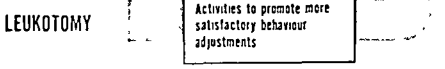
ORAL PSYCHOTHERAPY
AIM
Utilization of meaningful physical activities as part of group and individual psychotherapy.
SHOCK THERAPY
AIM
Activities as a psychological follow up as the patient becomes more accessible after shock
LEUKOTOMY
AIM
Activities to promote more satisfactory behaviour adjustments
IMPROVED HOSPITAL ADJUSTMENT
TRIAL VISIT
DISCHARGE

Fig. 3.—Corrective therapy individualized and medically prescribed as an adjunct to the types of therapy shown.

In the gradual evolution of this program it has been determined that socialization is no longer a sufficiently specific therapeutic aim. Daily experience is producing motivated situations which are being modified to meet the more exact psychiatric needs of the patient. For example, it is now evident that activities may be adapted to produce higher levels of aggression, to develop a natural release of aggressive feeling, to realize such therapeutic aims as release of guilt feelings, and to attain narcissistic gratification. There is a definite trend toward more intensive specialization in this application of corrective exercise for the mental patient. This leads to a consideration of the possibility of modifying activities to meet the distinctive physical and personality needs of the patient and to draw out his social potentials for eventual resocialization. It is extremely important to begin corrective therapy as early as possible for achievement of the best results; this insures an adequate outlet for the patient's interest, time and energy; it satisfactorily substitutes activities for the patient's inactivity, and thus initiates constructive efforts toward ultimate rehabilitation.

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[12] Davis, J. E.: Exercises in the Medical Rehabilitation of Mental Patients, Occup. Therapy 26: 225 (Aug.) 1947.

Provision is made for the employment of naturally motivated activities in the form of exercise and play for the purpose of carrying out medically prescribed treatment. Major emphasis is placed on attracting the patient into activity and sustaining his interest in continued participation. Multiple grades and types of exercise are used. The corrective therapist as has been indicated is part of the total therapeutic team working under the supervision and direction of the psychiatrist and physiatrist, making ward rounds, reporting to them and regularly attending staff conferences. Activities are classified as to form, socialization and also application to disease entities when this is practicable within the range of our increasing experience.

### CLASSIFICATION OF EXERCISES AS TO FORM

1. *Correctives.*—Highly organized to remedy a specific condition.

2. *Reconditioning Exercises.*—For increase of strength and endurance. For psychiatric patients of all categories who may need such physical upbuilding.

3. *Educational Physical Exercises.*—To teach motor skills. For example, teaching the distractible schizophrenic patient to improve his golf game with the idea of stabilizing conduct through improved emotional control which comes from increased bodily control.

4. *Informal Activities.*—Especially conditioned for specific physical and mental dysfunction. For example, table tennis for partly paralyzed arm in which the exercises become motivated through play.

5. *Social Activities.*—In which the stress is placed on the cooperative rather than the competitive aspect of play, playing with rather than against people.

6. *Postural Exercises.*

7. *Swimming.*—For negativism, hysteria, sedation of hyperactive patients and stimulation for depressed types requiring reactivation.

8. *Specialized Preoperative and Postoperative Exercise.*—In connection with leukotomy, insulin and electric shock.

### CLASSIFICATION OF ACTIVITIES FOR SOCIALIZATION

1. Individual solitary activity—for certain schizophrenic patients who will not play in a group but must be inducted initially on an individual basis, such as solitary bowling.

2. Selective small group activities for patients who find favorable psychotherapeutic transference in small groups, such as badminton and code ball.

3. No body contact: volleyball, tennis, bowling, golf and calisthenics—for patients who suffer psychic trauma from physical contact.

4. Body contact activities: wrestling, boxing, football, tug of war—for patients who because of preformed skills and innate interest in these activities are favorably conditioned to accept physical contact.

### GENERAL FUNCTION OF CORRECTIVE THERAPY

The general functions of corrective therapy indicated by the role of corrective therapy in modern treatment o[illegible] patients is shown in figure 3. I[illegible] the patient's reaction are made by the corrective therapist as an aid to continued treatment and diagnosis. This physical exercise observation report (figs. 4 and 5; parts I and II of observational report) is intended as a guide for the organization of pertinent information which the therapist is able to discover in the exercise situation. Special training courses have given our personnel insight into the distinctive psychotherapeutic problems involved, particularly the transference between therapist and patient. Personnel have been chosen with major stress on selective personality factors which have been tabulated in a battery of psychologic tests enabling the Veterans Administration to utilize these most effective components in future placement.

*Functions of Corrective Therapy*

1. To give instructions to neuropsychiatric patients in activities, individually prescribed by the physician, based on the specific needs and abilities of the patient.

2. To provide adequate treatment for neurologic patients by the use of active exercise to reeducate the neuromuscular system to the maximum.

3. To administer a program of scientifically prescribed exercise for patients on the general medical and surgical service.

*Classification of Activities for Application to Disease Entities*

| Psychiatric Condition | Aim of Activity | Type of Activity |
|---|---|---|
| Transient personality<br>Reactions to acute or special stress | To aid in the alleviation of the effects of situational stress | Any type of exercise or play of an interesting nature suited to the patient's physical tolerance and favorable to the environmental readjustments desired |
| Psychoses<br>Functional | To aid the patient's return to reality | Activities of a socially infectious nature. All types of simple and complex exercises and games based on severity of symptoms, external precipitating stress, premorbid personality, predisposition and inherent skills |
| Psychoneuroses | To aid in the relief of anxiety | Exercises and play activities involving gross movement, prescribed with special reference to patient's physical tolerance and potentials for the externalization of anxiety into activity |
| Psychoses<br>Organic<br>Syndrome of Deficit (Meyer) | To provide interesting and socially constructive activities within the physical and mental capacity of the patient | Exercises generally of a simple noncomplex nature; possible confusion, reduction of intellectual capacity, delirious trends, moral, ethical and esthetic aberrations and cover-up mechanisms taken into account |

Physical exercises providing a psychologic follow-up to electric shock therapy are differentiated for preshock and postshock categories, are administered daily for approximately one hour and are started about eighteen hours prior to shock. Patients are divided into three groups for swimming activities as follows:

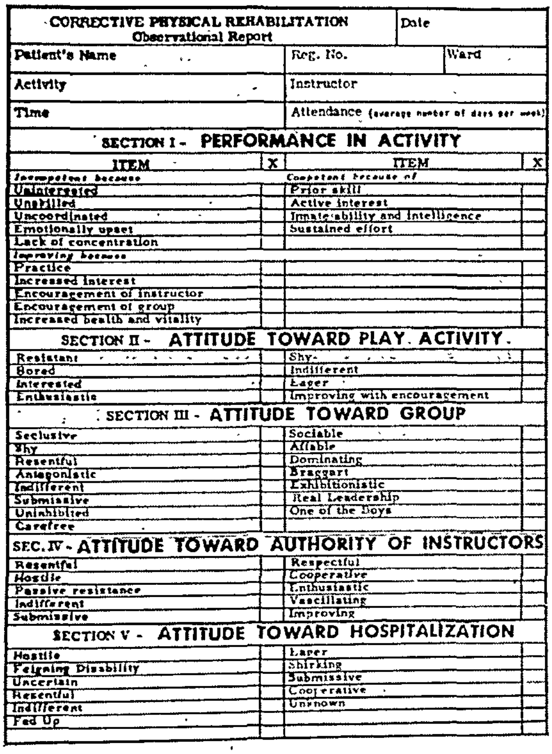
1. Hyperactive and aggressive patients engage in fast exercises, as water volleyball, water goal high.

2. Less active patients take part in simple swimming skills and water coordination exercises.

3. Regressed and depressive types participate in light calisthenic drills and coordination exercises.

Postshock exercises begin approximately five and one-half hours after shock treatment, patients being segregated in the same manner as for preshock.

Experience has developed the following general objectives: (1) relief of body soreness, (2) reawakening of confidence and agression, (3) sedation and stimulation through swimming, (4) development of coordination, muscle tone and strength and (5) fundamental skills..



| | | | |
|---|---|---|---|
| CORRECTIVE PHYSICAL REHABILITATION<br>Observational Report | | Date | |
| Patient's Name | | Reg. No. | Ward |
| Activity | | Instructor | |
| Time | | Attendance (average number of days per week) | |
| SECTION I - PERFORMANCE IN ACTIVITY | | | |
| ITEM | X | ITEM | X |
| *Incompetent because* | | *Competent because of* | |
| Uninterested | | Prior skill | |
| Unskilled | | Active interest | |
| Uncoordinated | | Innate ability and intelligence | |
| Emotionally upset | | Sustained effort | |
| Lack of concentration | | | |
| *Improving because* | | | |
| Practice | | | |
| Increased interest | | | |
| Encouragement of instructor | | | |
| Encouragement of group | | | |
| Increased health and vitality | | | |
| SECTION II - ATTITUDE TOWARD PLAY ACTIVITY | | | |
| Resistant | | Shy | |
| Bored | | Indifferent | |
| Interested | | Eager | |
| Enthusiastic | | Improving with encouragement | |
| SECTION III - ATTITUDE TOWARD GROUP | | | |
| Seclusive | | Sociable | |
| Shy | | Affable | |
| Resentful | | Dominating | |
| Antagonistic | | Braggart | |
| Indifferent | | Exhibitionistic | |
| Submissive | | Real Leadership | |
| Uninhibited | | One of the Boys | |
| Carefree | | | |
| SEC. IV - ATTITUDE TOWARD AUTHORITY OF INSTRUCTORS | | | |
| Resentful | | Respectful | |
| Hostile | | Cooperative | |
| Passive resistance | | Enthusiastic | |
| Indifferent | | Vascillating | |
| Submissive | | Improving | |
| SECTION V - ATTITUDE TOWARD HOSPITALIZATION | | | |
| Hostile | | Eager | |
| Feigning Disability | | Shirking | |
| Uncertain | | Submissive | |
| Resentful | | Cooperative | |
| Indifferent | | Unknown | |
| Fed Up | | | |
| | | | |

Fig. 4.—*Observational report, part 1.*

RESULTS

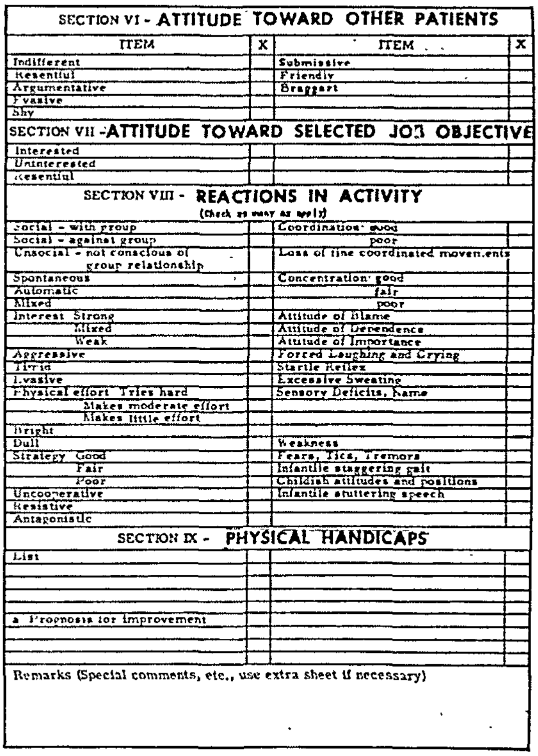
Corrective therapy is part of the well rounded program of physical medicine rehabilitation for patients who have undergone leukotomy. Reports received, covering several hundred patients treated, give an important status to this adjunct therapy. Patients with most unfavorable prognosis may participate at first in childike imitative manner, later becoming more animated, spontaneous and interested. Figure 6 is a chart of a typical case. This includes a personality record paralleling an activity record, the latter showing elemental, individual and group levels. Postoperative therapeutic methods attack such manifestations as lack of spontaneity, carelessness, indiscretion of speech, indifference for the future and distractibility. These patients are attracted to individually prescribed exercises, and, in the words of a chief of physical medicine, "The flattened expression may leave the face after a month and improvement through corrective therapy carries over to other activities." The patient who has undergone leukotomy is seen in the Corrective Therapy Department about the fourth postoperative day. Two or three weeks usually pass before interest and rational effort are elicited, during which time the patient may become motionless and seclusive or may participate in some elemental activity, as playing catch with almost any type of ball. The patients usually go through a period of aggression during the improvement phase, during which they are able to find helpful outlets through corrective exercise. Patients become naturally divided into two groups, fast and slow, the former comprising those whose operation was performed as long as a year previously, while the slow group comprises those operated on more recently.

The general results of leukotomy combined with postoperative psychiatric and physiatric therapy indicate that about one third of the patients are able to return home, one third improve in the hospital and one third show no improvement or become worse.

An exploratory training technic has been developed for stuporous and mute catatonic patients. Elemental assistive and resistive exercises are combined with educational retraining methods to parallel mental reactivation with physical stimulation. Psychologic exercises are added to assist the patient to regain recognition of objects as to shape, size, design and utilitarian value. A most effective transference is shown by the decrease in explosive behavior generally associated with these cases. Reports indicate considerable promise for this procedure which attacks these difficult and inaccessible types through early activity.

Other exploratory methods are arranged with occupational therapy through which regressed patients whose interest span is limited are activated by means of exercises and referred back to the occupational or manual arts therapy departments for reassignment.

A reintegrative research program is being carried out in one of the large Veterans Administration neuropsychiatric hospitals to determine whether an intensive regimen of varied activity can reclaim patients who have not responded to either psychotherapy or drastic shock and to determine whether corrective procedures can prevent further regression.



| | | | |
|---|---|---|---|
| SECTION VI - ATTITUDE TOWARD OTHER PATIENTS | | | |
| ITEM | X | ITEM | X |
| Indifferent | | Submissive | |
| Resentful | | Friendly | |
| Argumentative | | Braggart | |
| Evasive | | | |
| Shy | | | |
| SECTION VII - ATTITUDE TOWARD SELECTED JOB OBJECTIVE | | | |
| Interested | | | |
| Uninterested | | | |
| Resentful | | | |
| SECTION VIII - REACTIONS IN ACTIVITY<br>(Check as many as apply) | | | |
| Social - with group | | Coordination: good | |
| Social - against group | | poor | |
| Unsocial - not conscious of group relationship | | Loss of fine coordinated movements | |
| Spontaneous | | Concentration: good | |
| Automatic | | fair | |
| Mixed | | poor | |
| Interest Strong | | Attitude of Blame | |
| Mixed | | Attitude of Dependence | |
| Weak | | Attitude of Importance | |
| Aggressive | | Forced Laughing and Crying | |
| Timid | | Startle Reflex | |
| Evasive | | Excessive Sweating | |
| Physical effort Tries hard | | Sensory Deficits, Name | |
| Makes moderate effort | | | |
| Makes little effort | | | |
| Bright | | | |
| Dull | | Weakness | |
| Strategy Good | | Fears, Tics, Tremors | |
| Fair | | Infantile staggering gait | |
| Poor | | Childish attitudes and positions | |
| Uncooperative | | Infantile stuttering speech | |
| Resistive | | | |
| Antagonistic | | | |
| SECTION IX - PHYSICAL HANDICAPS | | | |
| List | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| a Prognosis for improvement | | | |
| | | | |
| | | | |
| | | | |
| Remarks (Special comments, etc., use extra sheet if necessary) | | | |

Fig. 5.—Observational report, part 2.

There is a definite trend in all of the Veterans Administration neuropsychiatric hospitals to lay greater stress on the value of motivated exercise situations as adjuncts to psychotherapy. Total push programs utilize all possible facilities and types of therapy executed by the entire therapeutic team.

Corrective therapy offers these discussion groups strenuous but enjoyable physical activity, which acts as a cohesive and binding influence on its patient-members. Proficiency charts with suggested activities are kept. Group games, both competitive and noncompetitive, are provided for the purpose of creating a strengthened attitude of sociability, made possible as the patients play and work together in a unit. This effort of understanding one another in a modifiable and relaxing atmosphere helps to overcome withdrawal tendencies and has developed helpful transference among the members of the group. Both corrective therapists and psychotherapists are impressed with the possibilities of utilizing such highly motivated situations in the promotion of a total treatment program.

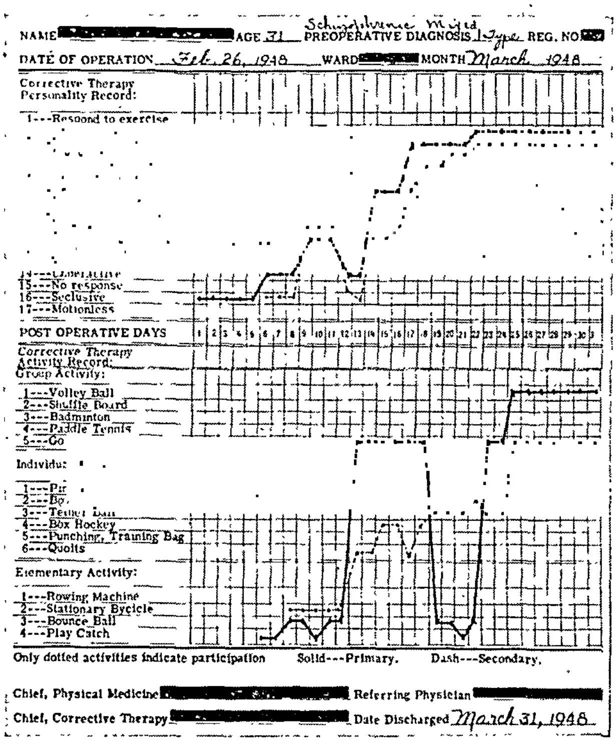


Fig. 6.—Prefrontal leukotomy reaction chart.

Factual data and reports coming from hospitals that have sections of corrective therapy contain numerous examples of the externalization through medically prescribed activities of hostile combativeness and other behavior aberrations, permitting the patient to give expression to these drives in a more socially acceptable way and thereby lessening need for active restraint. One hospital reports the results of a medically prescribed swimming program as follows: The average number of restraints was reduced by 65 per cent; serious disturbances were reduced by 75 per cent, and the average amount of additional sedation was remarkably reduced, with one less attendant needed on the ward during the day. An exercise program on the service for acute disturbances of a 2,000 bed hospital effected a reduction of wet packs by 1,233 over a period of six months. Another large hospital reports a decline of tub treatments from 295 to 78 and packs from 364 to 325 over a period of three months. Figure 7 shows results of swimming in minimizing the need for restraint.

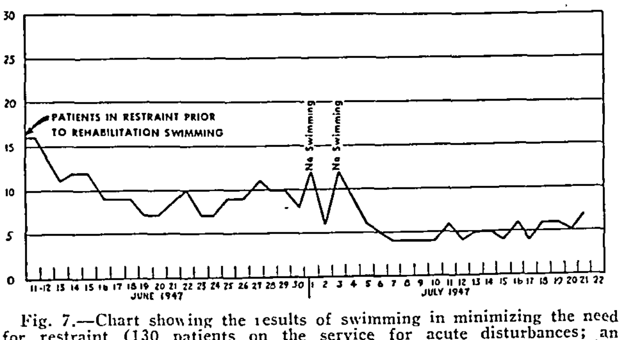


Fig. 7.—Chart showing the results of swimming in minimizing the need for restraint (130 patients on the service for acute disturbances; an average of 20 of the most acutely disturbed patients engage in swimming twice daily).

Stimulation of interest in exercise is stressed for aged patients, for training in activities essential to daily living and establishing effective health habits (fig. 8). Light exercises are selected with coordination as a primary aim. Preference is given to such simplified and easily motivated activities as modified hiking, swimming, shuffleboard and croquet. Exercises are given to prevent or correct postural defects. The therapeutic aim is to prevent deconditioning, to enable the patient to retain the vegetative reflexes and to care for daily needs of dressing and self feeding.

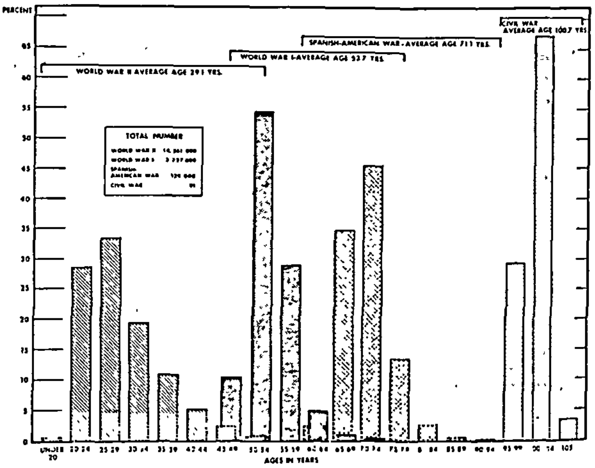


Fig. 8.—Chart showing age of living veterans as of June 30, 1947.

Research studies are laying the basis for programs and technics which will take into account the skill level along with physical tolerance and psychologic potentials which will enable the patients to find solid satisfaction from activity. Psychologic observations point to the significant element of regression rather than chronologic age as a major factor requiring careful study in an over-all study of geriatrics.

## SUMMARY

Corrective therapy is a positive therapeutic agent which has been developed as a part of physical medicine rehabilitation in the Veterans Administration. It is too soon to evaluate definitely the net results of many of the technics in corrective therapy, but their value has already been proved in many psychiatric illnesses.

Just as physiologic effects of exercise may aid in reestablishing former patterns of motion in neurologic conditions resulting from lesions of the central nervous system, so in psychiatric disease new behavior patterns are developed by corrective methods which can be guided by the psychiatrist and the physiatrist advantageously toward normal behavior and eventual recovery.

In physical medicine it may be several years before the exactness of dosage of various procedures will be definitely established as compared with pharmaceutic dosage. Likewise, in corrective therapy the surface of the possibilities in this field have barely been scratched. Much remains to be done in the proper evaluation, observation and study of various methods so as to derive the optimal type, frequency and duration of dosage for various mental conditions.

Corrective therapy in the Veterans Administration has stimulated a renaissance of interest and a concerted attack in this field throughout neuropsychiatric hospitals on the problem of the best methods of treatment of mental illness with prescribed activity. Psychiatrists are viewing progress along these lines with interest and anticipation.

### CONCLUSIONS

1. Corrective therapy has proved its usefulness in the psychiatric field through its application to mental illness as a dynamic adjunct to psychotherapy and as a component section of total rehabilitation in coordination with other rehabilitation sections of the physical medicine rehabilitation service.
2. Corrective therapy has been of definite therapeutic value in its specialized application in catatonic patients and for postshock and postleukotomy conditions.
3. Corrective therapy offers new avenues of approach to the rehabilitation of aged patients with chronic mental illness.
4. The further practical application of the principles of corrective therapy, based on observation, research and evaluation of progress, should lead to new and even more beneficial results.

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## Council on Physical Medicine and Rehabilitation

### REPORT OF THE COUNCIL

*The Council on Physical Medicine and Rehabilitation has authorized publication of the following report.*

*The Council wishes to express its appreciation for the valuable assistance rendered in the preparation of this report by Drs. Gordon Berry, Hallowell Davis, Kenneth Day, E. P. Fowler, Isaac H. Jones, Dean Lierle, Moses H. Lurie, Douglas Macfarlan, C. Stewart Nash and Paul E. Sabine.*

HOWARD A. CARTER, *Secretary.*

### MINIMUM REQUIREMENTS FOR ACCEPTABLE PURE TONE AUDIOMETERS

An audiometer is a device used to measure the sensitivity of hearing. The particular type of audiometer with which this specification is concerned is the pure tone audiometer designed for general diagnostic use with individual subjects. This specification has been prepared with the objective that the measurements obtained on any audiometer shall truly represent a comparison of a person's auditory threshold at prescribed frequencies with the corresponding normal thresholds. A hearing test of a given person on all audiometers designed in accordance with the standards should yield substantially the same results when performed under similar conditions of ambient noise.

The normal threshold of hearing at a given frequency is the modal value of the minimum sound pressure which at that frequency produces a sensation of pitch in a large number of normal ears of persons in the age group from 18 to 30 years, inclusive. The threshold of hearing is measured by presenting tones of successively greater or less intensity to a listener.

#### 1. GENERAL REQUIREMENTS

(*a*) The audiometer shall be an electroacoustic generator, with associated air and bone conduction receivers, which provides pure tones of selected frequencies covering a considerable portion of the auditory range. The frequency and intensity shall be controllable.

(*b*) The audiometer shall operate by electrical power from one or more of the following sources: battery power supply, direct current at line voltage of 117 volts and alternating current at 60 cycles per second and 117 volts. Tests for compliance with the requirements of sections 2 and 4 shall be made at line voltages of 110 and 125 volts or at the extremes of the usable range of battery voltages recommended by the manufacturer. Tests for compliance with the requirement of sections 3, 5, 6, 7 and 8 shall be made at a line voltage of 117 volts or at the battery voltage recommended as operating voltage by the manufacturer.

(*c*) The audiometer shall have a nameplate giving the manufacturer's name, the serial number, the voltage and frequency (or frequencies) of the power supply and the power consumed by the audiometer.

#### 2. FREQUENCIES

(*a*) The audiometer shall produce at least the following definitely identified frequencies: 125, 250, 500, 1,000, 2,000 and 4,000 cycles per second for both air and bone conduction measurements, and also 8,000 cycles per second for air conduction measurements. Dials shall be marked so that frequencies in cycles per second can be easily read.

(*b*) Each frequency generated by the audiometer shall have a value within ±5.0 per cent of the corresponding frequency reading.

#### 3. INTENSITY INTERVAL AND INTENSITY RANGES FOR AIR CONDUCTION

(*a*) The readings of the intensity dial or scale shall be hearing-loss readings, i. e., when the intensity dial is set at zero the intensity of the tone produced shall be at the normal threshold of hearing for that frequency as defined in section 4*a*, and other readings shall indicate the ratio, expressed in decibels, of the intensity of the test tone to the corresponding normal threshold of hearing.

(*b*) Hearing-loss readings shall extend from 10 decibels below threshold by intervals of 5 decibels or less up to at least the values given in table 1.

(*c*) At each of the foregoing frequencies the measured difference (in decibels) of the intensity levels corresponding to any two graduations of the intensity dial shall agree with the indicated difference in hearing-loss readings within 1.5 decibels. Thus for a 5 decibel interval on the intensity dial, the measured difference in intensity levels shall not be less than 3.5 decibels or more than 6.5 decibels. The difference in the intensity levels shall be determined by measurement of the voltage levels at the input of the receiver with the receiver coupled to the National Bureau of Standards coupler 9-A or its acoustic equivalent.[1]

TABLE 1.—*Value for Hearing-Loss Readings*

| Frequency Reading in Cycles per Second | Hearing-Loss Readings in Decibels Above Normal Threshold |
|---|---|
| 125 | 65 |
| 250 | 80 |
| 500 | 85 |
| 1,000 | 95 |
| 2,000 | 95 |
| 4,000 | 90 |
| 8,000 | 75 |

---

[1] The National Bureau of Standards Coupler 9-A has been used by audiometer manufacturers and the National Bureau of Standards as a standard coupler for many years. Its volume is approximately 6 cc. Recently the American Standards Association, Inc., has prepared American Standard Z24.9/186, in which a coupler designated American Standards Association Type 1 is recommended. Adaptation of the American Standards Association Type 1 coupler, or of any other coupler, to the different earphones supplied by audiometer manufacturers involves research, and consequently the issuance of this standard would be delayed by one or more years, if any coupler other than no. 9-A were to be incorporated into the standard. The American Standards Association, Inc., plans to rewrite American Standard Z24.9/186 as soon as the basic research has been completed. The industry and the requirements of the Council on Physical Medicine and Rehabilitation will then change gradually from the National Bureau of Standards coupler 9-A to a standard coupler approved by the American Standards Association. The phrase "or its acoustical equivalent" in the present requirements is intended to include any standard coupler approved by the American Standards Association as a substitute for or to replace the National Bureau of Standards coupler 9-A.

### 4. SOUND-PRESSURE OUTPUT OF THE AIR CONDUCTION RECEIVER

(*a*) *The sound pressure produced by the air conduction* receiver at each hearing-loss reading shall not differ from the indicated value, as referred to normal threshold, by more than 4 decibels at the indicated frequencies of 125, 250, 500, 1,000 and 2,000 or by more than 5.0 decibels at 4,000 and 8,000 cycles per second. Measurements of sound-pressure output shall be made with the receiver coupled to the National Bureau of Standards coupler 9-A or its acoustic equivalent. The sound pressures in coupler 9-A corresponding to normal threshold have been determined by the National Bureau of Standards for several types of receivers. For other types the methods of comparison advised by the National Bureau of Standards or specified by the American Standards Association, Inc., shall be employed. For Western Electric Type 705-A receiver the threshold pressures, determined by loudness balancing with the receivers used in the National Health Survey Hearing Study, are given in table 2.

TABLE 2.—*Threshold Pressures for Western Electric Type 705-A Receiver*

| Frequency in Cycles per Second | Root-Mean-Square Sound Pressure in Decibels Above 1 Dyne/Cm.$^2$ |
|---|---|
| 125 | —19.5 |
| 250 | —34.4 |
| 500 | —49.2 |
| 1,000 | —57.3 |
| 2,000 | —57.0 |
| 4,000 | —58.9 |
| 8,000 | —53.1 |

(*b*) The sound-pressure output of an audiometer shall be measured directly at the hearing-loss settings of 60 decibels. It shall be obtained at all other intensity readings by combination of the pressures measured at 60 decibels with the results of the measurements of hearing-loss interval as specified in section 3.

### 5. PURITY OF TEST TONES OF THE AIR CONDUCTION RECEIVER

The sound pressure of the fundamental signal shall be at least 25 decibels above that of any harmonic when measured with the receiver coupled to the National Bureau of Standards coupler 9-A or its acoustic equivalent. The harmonics shall be measured at the frequencies and hearing-loss settings listed in section 3*b*, even though the manufacturer may provide a maximum intensity higher than is specified in that section.

### 6. NOISE IN THE AIR-CONDUCTION RECEIVER

The root-mean-square weighted sound pressure due to all frequencies except the signal frequency and its harmonics shall be either less than 1.0 by $10^{-3}$ *dyne per square centimeter or at* least 60 decibels below the sound pressure due to the signal frequency and its harmonics at all specifically designated frequencies and hearing-loss dial settings. The measurement of noise shall be made with the oscillator of the audiometer inoperative, but with the remainder of the circuit in normal operating condition. The other conditions of this measurement and the relative weights employed in the calculation shall be those specified by the American Standards Association, Inc., for this purpose (American Standard Z24.9/186).

### 7. TONE INTERRUPTER

An audiometer shall be equipped with a device for turning the tone on and off without introducing an objectionable click (i. e., transient extraneous frequencies, audible to a normal ear) in the receiver. In addition, it is recommended that the time required for the rise and decay of the test tone be within 0.1 to 0.5 second to reach ±1 decibel of the required sound pressure.

### 8. THE BONE CONDUCTION RECEIVER

Audiometers shall be supplied with bone conduction receivers for measuring the threshold of hearing for bone-conducted sound.

(*a*) A suggested procedure for establishing the normal threshold of hearing for bone-conducted sound as measured by a particular audiometer is as follows: Determine at each frequency the intensity level, as measured by the hearing-loss setting of the audiometer, which can just be heard when the bone conduction receiver is pressed firmly against the mastoid just back of the ear of each of 6 subjects with hearing losses at the frequencies employed of not more than 10 decibels by air conduction. The mean of the six measurements at any frequency is taken as the normal threshold for bone-conducted sound of that frequency. This average will be the zero setting of the particular audiometer for bone-conducted sound of that frequency. All measurements specified in this section are to be made in a room free from extraneous sound of sufficient intensity to vitiate the measurements. Acceptance tests on this requirement may follow the same procedure.

(*b*) The bone conduction receiver shall not radiate sound to such an extent that the sound reaching the tympanum through the auditory meatus might influence the validity of the bone conduction measurement. As judged by an observer with normal hearing, the sound received at the ear by air radiation from the bone conductor shall have a sensation level at least 5 decibels below the level which the receiver generates by bone conduction when in contact with the head.

This test shall be performed by determining the bone conduction threshold in the usual way, and then, with the bone conductor held in approximately the same position as in the threshold measurement, but with the driver element or contact area of the receiver resting on the soft flesh at the end of the operator's finger and with closure comparable to that provided by contact with the mastoid, the threshold at which any auditory sensation is perceived shall be noted. Care must be taken that no direct contact be made between the finger and skull. The threshold of auditory sensation shall be at least 5 decibels above the direct bone conduction threshold. A jury of at least 6 persons with hearing losses for air-borne sound not greater than 10 decibels at the frequencies employed shall perform the test and the mean of their results taken. The above test is not required at frequencies above 2,000 cycles per second.

### 9. AUDIOGRAM BLANKS

If the manufacturer supplies with his instrument blanks for plotting measured hearing losses, these blanks shall comply with the following specifications: The blank shall be ruled with rectangular coordinates, with frequencies in cycles per second on a logarithmic scale as the abscissas and hearing loss in decibels on a linear scale as the ordinates. Frequencies shall be shown by vertical lines equally spaced at octave intervals. (For an instrument that produces test tones at intermediate frequencies, vertical lines to correspond to these frequencies should appear at the proper fractional parts of the octave intervals.)

Normal hearing for both air-borne and bone-conducted sounds shall be indicated by a single horizontal line marked 0 (zero), near the top of the blank. "Hearing loss in decibels" shall be indicated by horizontal lines, equally spaced at 10 decibel intervals and numbered downward from the 0 line. One octave on the frequency scale shall be the same distance as 20 decibels on the hearing loss scale.

### 10. SHOCK HAZARD

Audiometers shall be free from electric shock hazard. A shock hazard shall be considered to exist at an exposed live part if the open circuit potential is more than 25 volts and the current with a 1,500 ohm load is more than 5 milliamperes.

### 11. GUARANTIES

The manufacturer shall make to the purchasers the following guaranties: (*a*) Any defect other than those due to accident or damage from improper use that may appear within a period of one year from date of purchase will be corrected and the instrument recalibrated at no cost to the purchaser except for transportation charges; replaceable parts which may deteriorate with use, such as vacuum tubes, shall, by agreement, be supplied at reasonable cost.

(*b*) The maker will provide adequate instructions for the proper care and upkeep of his products and will encourage the purchaser to send his audiometer at reasonable intervals to the factory or to a qualified distributor for check as to performance and needed servicing at a reasonable cost.

### 12. MARKETING AND ADVERTISING

Rules of the Council on Physical Medicine and Rehabilitation shall be adhered to by manufacturers of acceptable audiometers.

# Council on Pharmacy and Chemistry

## NEW AND NONOFFICIAL REMEDIES

*The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.*

AUSTIN SMITH, M.D., *Secretary.*

**SODIUM SULFATE.—U. S. P.—$Na_2SO_4.10H_2O$.**

For description and standards see the U. S. Pharmacopeia under Sodium Sulfate.

*Actions and Uses.*—Sodium sulfate administered orally in solution acts as a saline cathartic, but it is considered more disagreeable and less active than magnesium sulfate for this purpose. Sodium sulfate, however, possesses useful diuretic properties that are less well known clinically. As a diuretic it is administered intravenously in the form of an isotonic (4%) solution in distilled water. The resulting diuresis is believed to be due to the impermeability of the tubule cells to the salt, which therefore remains in the tubules and diminishes the absorption of water by its osmotic action. In animal experiments, sodium sulfate was shown to be the most effective of the salts commonly used for this purpose. Following intravenous injection, sodium sulfate is excreted almost completely in the urine with little or no retention of the sodium ion. It is essentially nontoxic when administered in this manner.

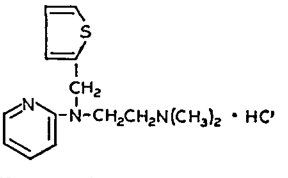
Isotonic solution of sodium sulfate has been found to be effective as a diuretic agent in the treatment of oliguria or anuria secondary to the crush syndrome, burns, transfusion reactions, toxic hemolysis and obstructive lesions of the genitourinary tract. It should be emphasized that mechanical obstruction to the urinary tract should be corrected before attempting to induce diuresis. The solution may also be tried in the treatment of sulfonamide anuria.

*Dosage.*—In adults the dosage ranges from 1 to 3 liters per day, administered intravenously. The volume and frequency of the individual dose are dependent on the condition of the patient and the response to treatment. No data are available concerning its use in infants and children. The rate of administration, based on animal studies, ranges from 500 cc. to 1,000 cc. per hour, but in man this may be more rapid than necessary. Too rapid injection with overloading of the cardiovascular system should be avoided.

DON BAXTER, INC., GLENDALE, CALIF.

**Solution Isotonic Sodium Sulfate:** 1,000 cc. Vacoliter containers. A solution of sodium sulfate 4 per cent in sterile distilled water.

**METHAPYRILENE HYDROCHLORIDE.—"Thenylene Hydrochloride" (Abbott).**—N,N-dimethyl-N′-(α-pyridyl)-N′-(α-thenyl) ethylenediamine hydrochloride.—$C_{14}H_{19}N_3S \cdot HCl$.—M. W. 297.84.—The structural formula for methapyrilene hydrochloride may be represented as follows:



*Actions and Uses.*—Methapyrilene hydrochloride produces effects similar to those of other histamine-antagonizing agents. Methapyrilene hydrochloride has a moderate therapeutic efficacy and its sedative action is about equal to that of tripelennamine hydrochloride. There is a moderate tendency to gastrointestinal irritation.

*Dosage.*—The average adult dose is 50 to 100 mg. As with other antihistaminics, the dose should be the smallest which will relieve symptoms.

*Tests and Standards.*—

Methapyrilene hydrochloride occurs as a white, crystalline powder having a faint odor. It melts between 159 and 162 C. It is very soluble in water, freely soluble in alcohol and chloroform, and very slightly soluble in ether and benzene. The free base is obtained as an oil upon the addition of a 5 per cent sodium hydroxide solution to an aqueous solution of methapyrilene hydrochloride. A 5 per cent aqueous solution of methapyrilene hydrochloride has a pH between 5.9 and 6.4.

Dissolve about 25 mg. of methapyrilene hydrochloride in 5 cc. of water. Add a few drops of nitric acid, followed by 1 cc. of silver nitrate T.S.: a white precipitate of silver chloride is obtained. Add about 0.1 Gm. of methapyrilene hydrochloride to 2 cc. of sulfuric acid: an orange-red solution is obtained, which becomes reddish brown (*distinction from pyribenzamine hydrochloride*).

Dissolve about 0.2 Gm. of methapyrilene hydrochloride in 5 cc. of alcohol and add 5 cc. of a saturated solution of picric acid in alcohol. Bring the mixture to boiling and then allow to cool: a yellow crystalline methapyrilene dipicrate is obtained.

Add 3 drops of a saturated aqueous solution of Reinecke's salt to 2 cc. of a 1 per cent aqueous solution of methapyrilene hydrochloride: a pink precipitate is formed.

Dry about 1 Gm. of methapyrilene hydrochloride, accurately weighed, at 100 C. for 4 hours: the loss in weight does not exceed 0.5 per cent.

Char about 0.2 Gm. of methapyrilene hydrochloride, accurately weighed, over a low flame. Cool, then add 1 cc. of sulfuric acid and continue ignition until no carbon remains: the residue should not exceed 0.3 per cent.

Transfer about 0.5 Gm. of dry methapyrilene hydrochloride, accurately weighed, to a 100 cc. volumetric flask. Add 50 cc. of distilled water, and 3 cc. of nitric acid. Mix thoroughly, add exactly 25 cc. of 0.1 *N* silver nitrate and fill to the mark with distilled water. Shake the mixture vigorously and allow the silver chloride to settle out. Transfer exactly 50 cc. of the clear, supernatant liquid into a flask and titrate the excess silver nitrate with 0.1 *N* ammonium thiocyanate, using ferric ammonium sulfate T.S. as an indicator. Each cc. of 0.1 *N* silver nitrate is equivalent to 0.003647 Gm. of hydrogen chloride: the amount of hydrogen chloride found is not less than 12.1 nor more than 12.4 per cent.

Transfer 0.1 Gm. of methapyrilene hydrochloride, accurately weighed, to a 100 cc. volumetric flask and dilute to the mark with ethanol. Mix thoroughly and transfer 10 cc. of the solution to another 100 cc. volumetric flask. Dilute to 100 cc. with ethanol; mix well and transfer 10 cc. of the solution to a third 100 cc. volumetric flask and dilute to 100 cc. The final solution (0.001 per cent) exhibits ultraviolet absorption maxima at 2400 ($E^{1\%}_{1cm.} = 623 \pm 6$) and 3050 Å, and a minimum at 2740 Å.

Transfer about 0.2 Gm. of dry methapyrilene hydrochloride, accurately weighed, to a separatory funnel. Add 10 cc. of water, 5 cc. of 0.5 *N* sodium hydroxide and extract with six 20 cc. portions of ether. Collect the ether extract in a separatory funnel and wash with two 5 cc. portions of water. Extract the wash water with 10 cc. of ether and add this ether to the combined ether extracts. Treat the combined ether extracts with 20 cc. of 0.05 *N* hydrochloric acid, accurately measured, and then successively with 10 cc. and 5 cc. of water. Combine the acid and water extracts, heat gently until the ether is removed and titrate the excess acid with 0.02 *N* sodium hydroxide, using a 0.1 per cent alcoholic solution of aurin as an indicator. Each cc. of 0.02 *N* hydrochloric acid is equivalent to 0.005227 Gm. of methapyrilene base. Methapyrilene hydrochloride contains not less than 87.0 nor more than 88.5 per cent of methapyrilene base.

METHAPYRILENE HYDROCHLORIDE CAPSULES AND TABLETS: Tablets and capsules of methapyrilene hydrochloride respond to the identification tests and assays described in the monograph on Methapyrilene Hydrochloride. They contain not less than 95 nor more than 105 per cent of the claimed amount of methapyrilene hydrochloride.

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

**Tablets Thenylene Hydrochloride:** 25 mg., 50 mg. and 0.1 Gm.

**AMINOPHYLLINE-U. S. P.** (See New and Nonofficial Remedies 1948, p. 325).

The following dosage form has been accepted:

THE SMITH-DORSEY COMPANY, LINCOLN, NEB.

**Suppositories Aminophylline:** 0.25 Gm.

**DIENESTROL** (See New and Nonofficial Remedies 1948, p. 377).

The following dosage forms have been accepted:

THE CENTRAL PHARMACAL CO., SEYMOUR, IND.

**Suspension Restrol:** 5 mg. per cc., 10 cc. vials. Preserved with chlorobutanol 0.5 per cent.

**Tablets Restrol:** 0.1 and 0.5 mg.

**METHYLTESTOSTERONE-U. S. P.** (See New and Nonofficial Remedies 1948, p. 410).

The following dosage form has been accepted:

RARE CHEMICALS, INC., HARRISON, N. J.

**Tablets Methyltestosterone:** 25 mg.

**OLEOVITAMIN A-U. S. P.** (See New and Nonofficial Remedies 1948, p. 544).

The following dosage form has been accepted:

BREWER & COMPANY, INC., WORCESTER 4, MASS.

**Gel-ets Oleovitamin A:** Each capsule contains 25,000 U. S. P. units of vitamin A.

**SULFAMERAZINE-U. S. P.** (See New and Nonofficial Remedies 1948, p. 134).

The following dosage form has been accepted:

BREWER & COMPANY, INC., WORCESTER 4, MASS.

**Tablets Sulfamerazine:** 0.5 Gm.

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SATURDAY, JULY 30, 1949

## SIR WILLIAM OSLER—CENTENARY ANNIVERSARY

The greatness of William Osler as a physician was a reflection of his broad approach to medicine and to life. He was outstanding in clinical and scientific medicine, but his greatness resided in his recognition of the importance of the Art of Medicine, which was exemplified in its highest form in contacts with patients and colleagues. Kindliness, a warm personal interest and an all-pervading recognition of the value of the individual were characteristic of Osler in his social and professional life. In "Aequanimitas" Osler expressed his personal belief in the qualities of mind and soul that enable a man to rise superior to the trials of life and meet difficulty, success and sorrow with serenity. The "Principles and Practice of Medicine," written in masterful English prose, was promptly recognized as a masterpiece. Through accuracy of clinical perception coupled with lucidity of expression, his inspiration permeated clinical medical practice. This textbook and its many successive editions tremendously influenced several generations of medical thinking in the English speaking world.

The Editorial Advisory Board of the *Archives of Internal Medicine* dedicated its July issue as the "Osler Memorial Number." Contributors to this issue, most of whom knew Osler well, were closely associated with him in the several phases of his career in this country and abroad. Osler's approach to life and his ability as a clinician, a teacher and a leader of men are well and fully presented. His tremendous influence on medical thinking is described in his accomplishments in Canada, in Philadelphia, at Johns Hopkins and at Oxford. Comments of these men who knew Osler best are replete with the sincerest expressions of warm friendliness and respect. The late Fielding Garrison wrote of Osler, "Every gift of the gods was his—he is one of nature's chosen. It is almost thirty years since he died, and his eminence as a teacher and physician has not waned, indeed the years have added to his glory. No one has in any way taken his place as the young physician's friend and as the world's best doctor."

For these and other qualities on this hundredth anniversary of his birth, Dr. William Osler must be reverently remembered as a great physician, an inspiring teacher and a friend of man.

## ENHANCED PENETRATION OF MUCOUS MEMBRANES

In 1928 Duran-Reynals[1] of the Rockefeller Institute described the presence in testicular extract of a factor which facilitates the spread of vaccine virus in the skin of rabbits. Ten years later Chain and Duthie[2] of Oxford University identified this "spreading factor" as a mucolytic enzyme (hyaluronidase), capable of depolymerizing and thus decreasing the viscosity of the intracellular mucin-like substance in rabbit skin. Hyaluronidase increased the interstitial spread of such diverse substances as india ink, rabies virus, methemoglobin, glucose and diphtheria toxin.

Therapeutic failure of penicillin when applied to nasal mucous membranes is sometimes attributed to the inability of the antibiotic to penetrate mucous surfaces and thus reach deep-seated foci of infection. Som[3] and his associates of New York's Mount Sinai Hospital therefore tested the possibility of enhancing the penetration of penicillin through mucous membranes by the use of hyaluronidase.

Two groups of patients selected for these tests included 12 with chronic suppurative disease of the maxillary sinus and 3 clinically free from sinus disease. After preliminary cocainization and routine cleansing, a cannula was inserted into the maxillary sinus. The sinus was irrigated with isotonic sodium chloride solution and thoroughly drained. Two hundred thousand units of crystalline penicillin G, dissolved in 2 to 3 cc. of saline solution, was then instilled into the sinus. An absorbable gelatin sponge pack was inserted into the middle meatus as a safeguard against leakage. Blood samples were titrated for penicillin, 30, 60 and 120 minutes later. In 3 of the 12 with infection penicillin was not demonstrable in the circulatory blood. In most of the other cases from 0.1 to 0.5 unit of penicillin per cubic centimeter was detected, the average being about 0.3 unit per cubic centimeter.

A few days later the same persons were retested with a similar dose of penicillin plus 20 to 42 turbidity-reducing units of hyaluronidase. In 2 of the patients in whom circulating penicillin could not be demonstrated in the first test, the addition of hyaluronidase resulted in a significant concentration of penicillin in the blood stream. In other cases the average penicillin titer was two to three times higher than in the first test.

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[1] Duran-Reynals, F.: Compt. rend. Soc. de biol. **99:** 6 (June) 1928; J. Exper. Med. **50:** *327* (Sept.) 1929.

[2] Chain, E., and Duthie, E. S.: Nature **144:** *977* (Dec. 9) 1939; Brit. J. Exper. Path. **21:** *324* (Dec.) 1940.

[3] Som, M. L.; Schneierson, S. S., and Sussman, M. L.: Proc. Soc. Exper. *Biol. & Med.* **70:** *96 (Jan.) 1949.*

Som concludes from these data that hyaluronidase increases significantly the penetration and diffusion of penicillin through nasal mucous membranes. Whether or not it also causes a more effective outward drainage from the deeper layers of the nasal tissues was not determined. The investigators noted definite clinical improvement in some of the patients treated with the penicillin-hyaluronidase mixture.

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### CAN THE RED CROSS SURVIVE?

In his keynote address to the 24th Annual Convention of the American National Red Cross last month President Basil O'Connor spoke boldly on present trends in charity and welfare. Tracing the trends of development and action of voluntary association for the alleviation of human suffering, he inquired as to whether or not this is an outmoded and inefficient method. "Must we consider the possibility," he asked, "that a compulsory system of humanitarian activity under state control is the best solution?" Mr. O'Connor considered that the expansion of governmental authority has taken place in the main because of the failure of private individuals or private groups to do certain jobs which society feels must be done. Modern fascist and communist dictators, said Mr. O'Connor, have risen to power on the ruins of the political and religious groups, the trade unions and the fraternal orders. They had to destroy these in order to clinch their power over the masses. Totalitarian systems of government dare not risk the existence of free and spontaneous action such as that resulting from voluntary associations.

In a democracy voluntary associations must play an essential role, warned President O'Connor, in preserving freedom in a society which our industrial technology is driving into an ever greater centralization. A part of the mission of the Red Cross is to protect free association because it is vital to free society.

Pursuing the theme, the President of the American Red Cross sounded a warning against the tendency to remove from voluntary associations the spirit of individualism that animates them in their work:

> Some high-minded citizens today are taking another view. They believe that the collection of funds for health and welfare purposes should be centralized; that individual organizations should lose identity; and that private humanitarian activity should thereby be put on a consolidated and allegedly more efficient basis. The motives behind this proposal may be good, but its proponents overlook the dangers inherent in its denial of the fundamental philosophy. In our opinion, these dangers might come to threaten in our land the entire tradition of voluntary health and welfare work.

If this nation were to remove from the sphere of voluntary action the whole experience of relief and assistance and transform it into "a massive, mechanical system of invisible deductions and automatic contributions," people would be deprived of the individual exercise of the impulse of generosity. Mr. O'Connor states emphatically his personal belief in the desirability of voluntary versus collective compulsory interest in the care of the sick and the unfortunate.

The voluntary associations which support many aspects of medical service in the United States are a fundamental, vital and in some ways unique feature of the American medical scene. While such organizations exist in other countries, they have not in any other nation achieved the power, the funds, the importance or the ability to do good that they have attained in the United States. These attributes are a reflection of their dynamic leadership. They are the result of the self-sacrificing, exhausting and highly intelligent benefaction of time, effort and ability given by men who could have achieved perhaps far more for themselves by selfish devotion to their own interests.

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## ***Current Comment***

### TELEVISION AT THE ATLANTIC CITY SESSION

The color television demonstration presented by the faculty of the University of Pennsylvania Medical School and the staff at the Atlantic City Hospital, with the cooperation of Smith, Kline and French, Laboratories, attracted a host of viewers. The program was beamed on a closed circuit from the local hospital to the convention hall. Ten receivers with 12 inch screens projected a color image. Occasionally the color image was changed to black and white, and the contrast was striking. Surgical procedures reproduced satisfactorily; however, there is room for improvement as far as delicate skin lesions are concerned. As a teaching medium color television has great potentialities. Television will not replace motion pictures. Television is a form of visual education which could be coordinated and integrated with other technics of teaching. This new teaching device comes at a time when medical educators are beginning to appreciate and understand the intelligent use of motion pictures. The sponsors of the color television program are to be complimented for their contribution to the advancement of medical teaching. Physicians attending this session have witnessed another milestone in the evolution of visual education. The use of television in making roentgenograms clearer and sharper and its value in making a diagnosis was presented at the Annual Meeting by the University of Illinois College of Medicine in cooperation with E. R. Squibb & Sons and RCA Victor Division, Radio Corporation of America. An extremely high degree of accuracy can be obtained in reproducing roentgenograms on television by varying the density and contrast controls on the receiver. Details of the original film can be brought out much more clearly. The films were transmitted over a closed circuit from a room adjacent to the receiving sets.

## CHOLINE AND THE PREVENTION OF EXPERIMENTAL AORTIC ATHEROSCLEROSIS

The effectiveness of choline in preventing the deposition of fat in the livers of depancreatized dogs and of rats fed diets high in fat or in cholesterol is now well established. Choline is also effective in the removal of such fat deposits after they have been formed. The question is thus raised as to whether choline might also prevent or remove other types of lipid deposits, such as aortic atherosclerosis produced experimentally by feeding of cholesterol. Several earlier investigations of this problem have resulted in contradictory results, perhaps due to the rise of varying proportions of choline to cholesterol or to varying lengths of periods of feeding and observation. The problem has recently been subjected to a careful reinvestigation.[1] Rabbits were fed a regular diet into which was incorporated cholesterol (25 animals) or cholesterol plus choline (29 animals) given at two levels, 0.5 or 1.0 Gm. daily. The blood cholesterol levels were determined biweekly in the animals of each group, and at intervals varying from forty-five to one hundred days necropsies were done on the animals and a macroscopic examination was made for atherosclerosis in the aorta and for fatty changes in the liver. Hypercholesterolemia was observed to the same degree in the rabbits of both groups. However, at necropsy between the fortieth and the eightieth day of the experiment none of the choline-treated animals showed macroscopic atheroma in the aorta, whereas 10 of 11 control rabbits examined at the same time did so. Some degree of atherosclerosis did develop in 12 of 16 rabbits fed cholesterol plus choline for periods exceeding eighty days, but the extent of the lesion was less than that found in the group not treated with choline. The author's conclusion that choline exhibits a protective action against the development of experimental atherosclerosis in rabbits fed cholesterol thus appears warranted.

## SYNTHESIS OF NICOTINIC ACID

New experimental and clinical evidence has been presented[1] for the current view of the transformation of tryptophane to nicotinic acid; the type of carbohydrate in the diet and the nature of the amino acid mixture being consumed seem to be factors in the extent of this transformation. The mechanism of the change has also received attention; although vitamin $B_6$ is required to promote the change of tryptophane to kynurenine and then to kynurenic acid in the rat,[2] it has no apparent influence on the tryptophane–nicotinic acid metabolism. Again, on the basis of differential time studies, the Duke investigators[3] conclude that, after growth has been depressed by adding gelatin to a low protein, nicotinic acid–poor ration, the favorable effect of added tryptophane is through its formation of nicotinic acid and not through its action as an essential, protein-building amino acid. As tryptophane, kynurenine and 3-hydroxyanthranilic acid support growth in mutant strains of Neurospora[4] and tryptophane and 3-hydroxyanthranilic acid replace nicotinic acid for the growth of rats,[5] tryptophane is apparently transformed to nicotinic acid through 3-hydroxyanthranilic acid as an intermediate step. The change from the amino acid to the vitamin can occur without the mediation of the intestinal flora, as indicated by the failure of enterectomy to prevent it.[6] Some support to the universality of the relationship is given by the observation of Nason[7] that the addition of tryptophane to the nutrient medium in which corn embryos were grown resulted in a 60 per cent increase in the content of nicotinic acid in the embryos. The demonstration of the details of the mechanism of the transformation of tryptophane to nicotinic acid has been made largely on a species which apparently can ordinarily synthesize its own nicotinic acid; further investigation will show whether or not in man this change is brought about by the same mechanism.

## THE HEALTHIEST ARMY IN THE WORLD

The July issue of *Life of the Soldier and the Airman*, a periodical published by the Adjutant General, is a well illustrated edition devoted to the Medical Department of the Army and comprising pictures of Army hospitals, leaders of the various corps of the Medical Department and activities carried on by the Medical Department in the hospitals and in the field. The United States Army was during World War II, and is at present, the healthiest army in the world. This exceptional health record is attributed to: (1) effective measures of preventive medicine; (2) strict sanitation in matters of food, housing and personal hygiene of the soldier, purification of water and insect and rodent control; (3) the development and application of new drugs, and (4) medical personnel expertly trained and imbued with only one aim—to save lives. In World War I, the incidence rate of tetanus is said to have been 13.4 per cent per 100,000 men; in World War II, the soldier was immunized against tetanus and the rate was 0.44 per cent per 100,000 men. In the 12 cases which occurred in World War II, 8 of the patients had either not been immunized or had not completed their immunization. During the Civil War the Union Army, with less than a million men, had 75,368 cases of typhoid compared with only 42 cases in World War II, when more than ten million American men and women were enrolled. An Army medical officer, Major Carl Darnall, in 1910, built the first apparatus for forcing chlorine gas through water, a practice which is now "worldwide and which has prevented untold millions of cases of typhoid, cholera, and the dysenteries." This issue also contains tributes to the Medical Department by the Honorable Louis Johnson, Secretary of Defense; Major General Raymond W. Bliss, Surgeon General of the Army; Rear Admiral C. A. Swanson, Surgeon General of the Navy, and Major General Malcolm C. Grow, the Air Surgeon.

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[1] Steiner, A.: Effect of Choline in Prevention of Experimental Aortic Atherosclerosis, Arch. Path. **45**: *327-332 (March) 1948.*

[1] The Relationship of Tryptophane and Nicotinic Acid, editorial, J. A. M. A., to be published.

[2] Rosen, F.; Huff, J. W., and Perlzweig, W. A.: J. Nutrition **33**: 561, 1947.

[3] Rosen, F., and Perlzweig, W. A.: J. Biol. Chem. **177**: 163, 1949.

[4] Mitchell, H. K., and Nye, J. F.: Proc. Nat. Acad. Sc. **34**: 1, 1948.

[5] Albert, P. T.; Scheer, B. T., and Deuel, H. J., Jr.: J. Biol. Chem. **175**: 479, 1948.

[6] Henderson, L. M., and Hankes, V.: Proc. Soc. Exper. Biol. & Med. **70**: 26, 1949.

[7] Nason, H.: Science **109**: 170, 1949.

# ORGANIZATION SECTION

## Washington Letter

*(From a Special Correspondent)*

July 18, 1949.

### Ewing Denies Welfare Department Would Propagandize for Socialized Medicine

Testifying on July 21 before the Senate Committee on Expenditures in support of establishment of a Department of Welfare in the President's Cabinet, Federal Security Administrator Oscar Ewing denied that facilities of the Department would be "used" to promote sentiment for socialized medicine. His statement to that effect came in the course of questioning of the witness by Senator John L. McClellan (Democrat, Arkansas), chairman, and Senators Irving M. Ives (Republican, New York), Russell B. Long (Democrat, Louisiana), Margaret Chase Smith (Republican, Maine) and James O. Eastland (Democrat, Mississippi).

Senator McClellan, who served as a member of the Hoover Commission, is committed in favor of a Department of Welfare which would take over functions now handled by the Federal Security Agency. He is, moreover, one of the Senate's most articulate opponents of compulsory health insurance. As soon as Mr. Ewing had completed the reading of his prepared statement, the committee chairman expressed his anxiety over charges that conversion of FSA into an executive department would hasten the advent of health insurance. He asked Mr. Ewing whether it was his plan to take advantage of the wider authority conferred by Cabinet status to promote such a program.

"There is nothing in this plan that would add to what I might or might not do," replied Mr. Ewing. "It is up to Congress to decide on national health insurance."

Emphasizing that the President has never told him that he will be the first Secretary of Welfare provided that Congress does not veto the White House recommendation that a new department be created, the Federal Security Administrator told the committee that he could foresee no particular advantage —as far as pressing the fight for health insurance is concerned —that would accrue from setting up a Department of Welfare.

When Senator Ives asked Mr. Ewing whether his elevation to a secretaryship would bring about a change in his attitude toward national health insurance, the FSA chief replied promptly, "No, I believe in it."

The New York Senator asked the witness whether, with the Office of Education under his control, the opportunity to propagandize for socialized medicine through "informal education" mediums might not be seized on.

"I don't see how the Secretary would have any more control over this than the Federal Security Administrator," Mr. Ewing responded.

Senator Andrew F. Schoeppel (Republican, Kansas), stating that he had received hundreds of telegrams expressing fear of a step-up in propaganda operations if the department is established, demanded to know whether counsel of the various states would be taken and cooperative relations cultivated by the Department of Welfare. Mr. Ewing answered emphatically in the affirmative.

Scheduled to testify July 22 on the reorganization plan were Dr. James R. Miller, for the American Medical Association; Dr. E. Harold Gale and Francis J. Garvey, for the American Dental Association; Dr. Charles R. Henry, for the Arkansas Medical Society, and Dr. Robert E. S. Young, for the Association of American Physicians and Surgeons.

### Proponents of D. C. Animal Experimentation Bill Disheartened

Washington branch of National Society for Medical Research this week issued a statement expressing the belief that its efforts to obtain Congressional passage of an animal experimentation bill are doomed to failure. The bill in question is S. 1703, legalizing the transfer to local hospitals and medical schools of unclaimed animals held beyond a certain period at the District of Columbia dog pound. Public hearings on the measure were held last spring by a Senate subcommittee whose chairman is Senator Margaret Chase Smith (Republican, Maine).

Issuance of the pessimistic announcement came in the wake of a meeting held by supporters of the bill on July 11 in the auditorium of the Medical Society of the District of Columbia. Principal speaker at the meeting was Dr. Andrew C. Ivy, who is secretary-treasurer of the National Society for Medical Research. Dr. Ivy reported that doctors and scientists have failed to express themselves affirmatively on the bill in sufficient numbers; therefore S. 1703 probably will languish in committee.

"The preposterous and dangerous situations which the antivivisection movement has produced is really the scientists' fault," he stated. "Our lack of effort in the past has enabled the antivivisectionists to achieve their present restrictions on research and teaching. It would be more than a tragedy if further inertia were to continue and this important legislation to suffer a defeat."

### Drs. Warren and Gregg Interrogated on Capitol Hill

Medical effects of atomic bomb explosions were described to the Joint Committee on Atomic Energy on July 11 by Dr. Shields Warren, Boston pathologist and director of the Division of Biology and Medicine, Atomic Energy Commission. Accompanying him to the Congressional hearing was Dr. Alan Gregg, in his capacity as chairman of the division's advisory committee. Members in attendance at the session, and who questioned the two physicians on various aspects of radiation injury, were Senators McMahon (chairman), Hickenlooper, Vandenberg and Knowland, and Representatives Durham (vice chairman), Van Zandt, Price and Elston.

In the course of questioning, Dr. Warren disclosed that the Atomic Energy Commission medical research program stands in danger of curtailment as a result of reduction in the budget for 1950. In this connection, Senator McMahon described as "silly" the following passage in the Senate Appropriations Committee's report on the Atomic Energy Commission's proposed budget for the fiscal year ending June 30, 1950:

"Curtailment of activity is thus recommended to be made in other fields of Commission operations, such as administration, community programs, biology and medicine, physical research, and to such aspects of reactor development as are not immediately necessary for national security."

### Dispute Over Hospital Control Settled

Late in July the Veterans Administration disclosed that differences between Administrator Carl R. Gray Jr. and Dr. Paul B. Magnuson, chief medical director, over administration of veterans hospitals had been settled amicably. Administrator Gray has conceded that responsibility for over-all operation of the institutions should be vested in the chief medical director. Henceforward the managers of hospitals will be responsible directly to Dr. Magnuson, instead of to Administrator Gray as was the previous policy.

### Hearings Conducted on Federal Rehabilitation Commission

A four day series of public hearings on proposed legislation to establish a new Federal Commission on Services for the Physically Handicapped was opened by a subcommittee of the House Committee on Education and Labor on July 12. The bill at issue (H.R. 3095) would take the government's activities in medical and vocational rehabilitation of the physically handicapped out of Federal Security Agency and give control to the new commission. FSA opposes the plan and offers instead a bill (H.R. 5577), introduced on July 11 by Chairman John Lesinski (Democrat, Michigan) of the House Committee on Education and Labor, designed to broaden the scope of federal services to the disabled under present policies of administration.

# Medical Legislation

## STATE LEGISLATION

### Alabama

**Bills Introduced.**—H. 4 proposes to authorize the state board of health *to construct, equip, maintain and regulate the operation of* **four tuberculosis hospitals** and to make rules and regulations governing the efficient and uniform operation of these hospitals. H. 7 proposes to authorize and require the state board of health to make **free cancer examination** facilities available to the residents of Alabama. H. 498 proposes to require attending physicians and hospitals or other institutions **to report deaths** resulting from or which might have resulted from violent or unlawful causes or from poisoning to the coroner of the county in which the death occurs. H. 635 proposes the enactment of a **licensing law for hospitals**, sanatoriums, rest homes, nursing homes and related institutions. H. 641 proposes to make it unlawful for any employer to require an employee or an applicant for employment to pay the **cost of a medical examination** or any cost for furnishing records required as a condition of employment by the employer. S. 86 proposes the establishment of an institution for the treatment and **rehabilitation of alcoholics.** S. 160, relating to the state program of cancer diagnosis, proposes that all females within the age limit prescribed by the state board of health shall be urged *to report voluntarily during* **Cancer Detection Month** *to a duly licensed* physician of their choice for an official examination. S. 316 proposes to authorize the state board of medical examiners to provide for the **licensing of clinical laboratories**, clinical laboratory directors and medical technologists. A medical technologist is defined as a person other than a physician and surgeon who under the direction of a physician and surgeon or under the direction of a clinical laboratory director performs the technical procedure called for in a clinical laboratory. A clinical laboratory is defined as a place organized and operated for the practical application of one or more of the fundamental sciences by the use of specialized apparatus, equipment and methods for the purpose of obtaining scientific data which may be used as an aid to ascertain the presence, progress and source of disease. S. 375 proposes the enactment of a **hospital licensing law** under the direction of the state board of health, and exempts from such law hospitals operated by the federal government and state mental hospitals. S. 408, to amend the law requiring **tuberculosis examinations** of certain persons in Alabama, proposes that all persons *within the age limits specified by the state board of health shall* have physical and roentgenologic examinations or otherwise be tested for tuberculosis during such periods or at such times as shall be designated by the state board of health.

**Bills Enacted.**—H. J. Res. 16 has become Act No. 111 of the Acts of 1949. It memorializes the Congress of the United States to use whatever means may be at their disposal to defeat all attempts, either direct or indirect, to **socialize medical care** in the United States. H. J. Res. 21 has become Act. No. 9 of the Acts of 1949. It requests the senators and representatives in Congress from the state of Alabama to actively support *the purposes of the Toby bill providing for the setting up of a National* Foundation for the study of **multiple sclerosis.** S. 125 has become Gov. No. 7 of the Laws of 1949. It makes it a felony for any person to introduce **benzedrine** or any habit forming drug or narcotic into a penal institution unless it was purchased and distributed by the prison physician and possessed in accordance with the orders of such physician.

### Connecticut

**Bill Enacted.**—H. 762 has become Public Act No. 77 of the Acts of 1949. Relating to the circumstances under which a person **licensed to practice chiropractic** in some other state may obtain a certificate of approval in Connecticut without examination, the law provides that the examining board shall not grant a certificate of approval without examination to any person who shall have been refused a certificate by the state board of healing arts because of failure to pass the examination or because of failure to satisfy the board of any other requirement, until such person shall have satisfied the state board of healing arts that he has met the conditions required of him and until he shall have received a certificate from such board. H. 1625 has become Public Act No. 150 of the Acts of 1949. It permits the practical training of **medical and dental students** prior to their receiving licenses to practice their respective professions. The training may be given under the supervision of a licensed dentist or physician in a dental or medical school or in a hospital, infirmary, clinic or dispensary affiliated with such school. S. 546 has become Public Act No. 104 *of the Acts of 1949. It grants* to **medical examiners** the same authority as is already had by coroners so far as determining when an autopsy shall be ordered is concerned. S. 1046 has become Public Act No. 171 of the Acts of 1949. It amends the exemption section of the medical practice act by eliminating therefrom persons **practicing massage or Swedish movement.**

### Florida

**Bills Enacted.**—H. 24 became law without approval June 13, 1949. It requires **chiropractors** to renew their licenses annually. H. 26 became law without approval June 13, 1949. It amends the **chiropractic act** relating to the qualifications of applicants and the procedure for the suspension or revocation of chiropractic certificates. H. 187 was approved June 13, 1949. It authorizes the board of commissioners of state institutions to select and acquire a site for a hospital for the treatment of **chronic alcoholics.** H. 423 became law without approval June 13, 1949. It authorizes the board of commissioners of state institutions to employ a chief psychiatrist and additional psychiatrists who shall have fully *recognized and* accredited training and experience in the practice of medicine and psychiatry, and who shall be attached to the medical staff of the Florida State Hospital. The **chief psychiatrist** shall be a reputable well educated physician, a graduate of a recognized class A medical school (as classified by the American Medical Association and the Association of American Medical Colleges) and a certified psychiatrist, and shall have had at least 5 years' experience in the actual practice of psychiatry, at least 2 years of which must have been in an institution for the care and treatment of the mentally ill. H. 828 became law without approval June 13, 1949. It amends the law relating to **hospital service plans** by providing that the term "medical and/or surgical service plan" shall *include the contracting for the payment of fees toward, or furnishing of*, professional services authorized or permitted to be furnished by a duly licensed doctor of medicine. H. 1331 became law without approval June 13, 1949. It provides for the licensing and regulating of **private nursing homes.** S. 550 was approved June 7, 1949. It provides that the tuberculosis board shall provide adequate facilities for the compulsory isolation and treatment of persons found to be suffering from ***tuberculosis.***

### Massachusetts

**Bills Introduced.**—H. 2540 proposes regulations for the organization of nonprofit ***hospital service corporations.*** H. 2580 proposes the creation of a special commission to make a further study relative to **regulating advertising** in connection with the sale of eyeglasses, lenses or eyeglass frames.

**Bill Enacted.**—H. 913 has become chapter 442 of the Laws of 1949. It amends the **workmen's compensation act** by providing that any physician who has testified either for an insurer or a claimant at least three times in the preceding twelve months shall not be eligible to be appointed by *the compensation commissioner as an impartial physician.*

### New Hampshire

**Bill Enacted.**—S. J. Res. 7 was approved June 21, 1949. It provides for the creation of a committee to study and analyze **hospital care and rates** *to be paid by the state to hospitals for services to recipients of* public assistance.

### Pennsylvania

***Bills Enacted.***—*H. Res. 74 was adopted April 27, 1949. It provides* for the creation of a commission to study and revise, among other things, **laws relating to mental health.** H. 144 has become Act No. 106 of the Acts of 1949. It authorizes the Department of Public Instruction or any of its departmental administrative boards, commissions or offices, on the advice of the attorney general, to maintain an action for an injunction against any person to restrain or prevent his practicing any *profession in the state* **without a license** whenever a license to engage in such activity is required by law. S. Res., Serial No. 35 was adopted April 11, 1949. It provides for the creation of a **commission to investigate the problem of medical care**, including the number of medical students available, the number of medical students able to attend graduate medical school, the number of medical doctors required for a minimum of services to the people and the part the commonwealth should play in making medical education available if needed. This commission should make a report to the next general assembly. S. 330 has become Act No. 87-A of the Laws of 1949. It provides an appropriation to the Department of Health of $150,000 for the purpose of **advancing research and demonstrations** on improvement in nutritional status and consequent improvement in physical well-being of civilians based on research work now in progress. S. 508 has become Act No. 79-A of the Acts of 1949. It provides an appropriation of $200,000 to the Department of Health for the maintenance and purchase of operating equipment of the **Institute for Cancer Research**, Incorporated.

# Coming Medical Meetings

Aero Medical Association, New York, Aug. 29-Sept. 2. Dr. Thomas H. Sutherland, 214 S. State St., Marion, Ohio, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., The Homestead, Sept. 8-10. Dr. Leroy A. Calkins, University of Kansas Medical Center, Kansas City 3, Kan., Secretary.

American Congress of Physical Medicine, Cincinnati, Netherlands Plaza Hotel, Sept. 6-10. Dr. Richard Kovács, 2 E. 88th St., New York 28, Secretary.

American Roentgen Ray Society, Cincinnati, Sept. 4-7. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Iowa, Secretary.

Colorado State Medical Society, Denver, Shirley-Savoy Hotel, Sept. 20-23. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver, Executive Secretary.

International Congress of Biochemistry, Cambridge, England, Aug. 19-25. Lt. Col. Francis J. Griffin, 56 Victoria St., London, W.C.1, Organizer.

International Neurological Congress, Paris, France, Sept. 5-10. Dr. Raymond Garcin, 19 rue de Borgogne, Paris, General Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel and Civic Auditorium, Sept. 21-23. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Montana State Medical Association, Butte, Aug. 1-4. Dr. Herbert T. Caraway, 115 N. 28th St., Billings, Secretary.

National Medical Association, Detroit, August 8-12. Dr. John T. Givens, 1108 Church St., Norfolk, Va., Secretary.

Utah State Medical Association, Salt Lake City, Sept. 1-3. Dr. Ray T. Woolsey, 42 S. Fifth East St., Salt Lake City 2, Secretary.

Vermont State Medical Socie [illegible] Dr. James P. Hammond, 542 Main St., [illegible]

Washington State Medical A[illegible] Hotel, Sept. 11-14. Dr. James W. Havil[illegible] Bldg., Seattle, Secretary.

West Virginia State Medical Association, White Sulphur Springs, The Greenbrier, Aug. 4-6. Mr. Charles Lively, 1031 Quarrier St., Charleston, Executive Secretary.

Wyoming State Medical Society, Casper, Sept. 12-14. Dr. George H. Phelps, 1606 Capitol Avenue, Cheyenne, Secretary.

# GOVERNMENT SERVICES

## SECRETARY OF DEFENSE

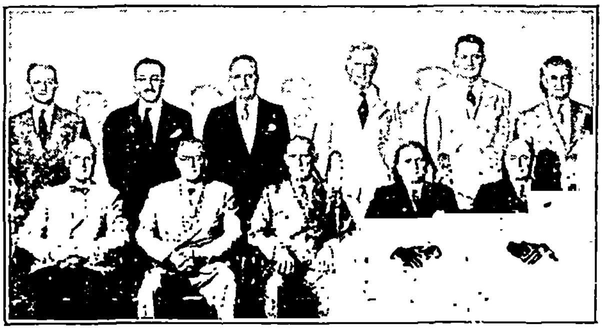
### HAWLEY BOARD SUBMITS FINAL REPORT

Concluding eighteen months of study of problems involved in coordinating medical activities of the National Military Establishment, the Committee on Medical and Hospital Services of the Armed Forces (Hawley Board) submitted its final report to Secretary of Defense and was dissolved July 6. Dissolution of the committee had been ordered when Dr. Raymond B. Allen assumed office July 6 as director of the newly established NME Medical Services Division. Its twenty-two subcommittees were transferred to the Medical Services Division. These subcommittees are composed of more than 100 officers and civilian personnel of the three military medical departments with long experience in problems involved in coordination of the Medical Services. The Hawley Board, in addition to Dr. Paul R. Hawley, its chairman, included the surgeons general of the Army, Navy and Air Force. Rear Admiral Joel T. Boone, U. S. Navy, was Executive Secretary.

During its tenure, the committee submitted twenty-two reports, containing more than 200 recommendations, many of which have been put into effect; others are in process of implementation. Some of the areas in which the committee conducted studies included hospitalization, standardization of preventive medicine practices and procedures, medical research, professional services, medical supply, standards of medical nomenclature and aviation medicine. Included in the committee recommendations also was one for a coordinating agency to function, as does the newly established Medical Services Division, at the level of the Office of the Secretary of Defense. In its studies, the committee visited about 150 medical installations of the three armed forces within the Continental United States, in the Panama and Caribbean Area, in Hawaii, Guam, Japan, the Aleutian Islands and Alaska.

### MEDICAL ADVISORY COMMITTEE

The appointment of the Armed Forces Medical Advisory Committee to act in an advisory capacity to the Secretary of Defense in the fields of medicine and the allied professions was recently announced. The Secretary has asked the committee to submit recommendations on general policies and programs for the National Military Establishment as a whole; on the development of medical services capable of supporting the needs of the armed services efficiently; the elimination of unnecessary duplications in the medical departments of the armed forces, and the development of the maximum continuing cooperation between the members of the civilian and allied professions in the armed services. In addition to advising the Secretary of Defense, the Committee was directed to give advice on medical problems, on request, to the Secretaries of the Army, Navy and Air Force, the Chairmen of the Munitions Board and the Research and Development Board or the head of any other board or agency in the National Military Establishment.



Armed Forces Medical Advisory Committee.—(L to R, seated) Dr. Paul Titus, Pittsburgh; Dr. Raymond B. Allen, Seattle; Mr. Charles P. Cooper, New York; Dr. Richard L. Meiling, Columbus, Ohio; Dr. Edward D. Churchill, Boston. (L to R, standing) Mr. J. Joseph Whelan, Executive Secretary of the Committee; Dr. Michael DeBakey, Houston, Texas; Daniel F. Lynch, D.D.S., Washington, D. C.; Dr. Maurice C. Pincoffs, Baltimore; Dr. Howard A. Rusk, New York; Dr. Francis J. Braceland, Rochester, Minn. Members of the Committee not shown above are: Walter H. Scherer, D.D.S., Houston, Texas, and Dr. Paul R. Hawley, Chicago.

The new committee is expected to examine questions of basic policy affecting the Medical Departments of the armed forces and thus succeed, rather than supersede, the existing Ad Hoc Committee on Medical and Hospital Services (Hawley Board) and to study and make recommendations for improving the services provided by existing medical organizations in the National Military Establishment. In addition to the civilian members of the Board, the Committee members are also: Major Gen. Raymond W. Bliss, Surgeon General of the Army; Rear Admiral Clifford A. Swanson, Surgeon General of the Navy, and Major Gen. Malcolm C. Grow, the Air Surgeon.

## NAVY

### EXAMINATION FOR THE REGULAR CORPS

The Navy Department announces that examinations for the selection of candidates for appointment as lieutenant (jg) in the Medical Corps will be conducted at Naval hospitals, September 12-16. Graduates of approved medical schools in this country and Canada who have completed an internship or who will have done so in four months of the examination date and who are less than 32 years of age may be examined for appointment. The total pay of this grade for officers with dependents is $5,011 a year and for those without dependents, $4,575.50. Details may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

### NEW REGULAR OFFICERS

The following lieutenants (jg) of the Medical Reserve Corps have accepted appointments in the regular Navy Medical Corps: Harry C. Alfred, Kansas City, Mo.; Jules H. Bogaev, Philadelphia; Paul D. Doolan, Hamden, Conn.; Frederick W. George III, Burgettstown, Pa.; Jerome Imberg, Richmond, Va., and Charles W. Lewis, Greensboro, N. C.

### DUTY UNDER INSTRUCTION

Nominations for duty under instruction in the Navy's Graduate Medical Training Program have been made for the following regular Navy medical officers:

Lieut. Comdr. William W. Manson to a Residency in Obstetrics and Gynecology at the Naval Hospital, NNMC, Bethesda, Md.

Lieut. (jg) Charles H. Beach to a Residency in Urology at the Naval Hospital, NNMC, Bethesda, Md.

Lieut. (jg) Benjamin L. Crue to a Residency in General Surgery at the Naval Hospital, Oakland, Calif.

Lieut. (jg) Henry L. Hook to a Residency in Internal Medicine at the Naval Hospital, Philadelphia.

Lieut. (jg) Joseph L. Maioriello to a Residency in Pediatrics at the Naval Hospital, NNMC, Bethesda, Md.

Lt. (jg) William R. Rundles to a Residency in General Surgery at the Naval Hospital, Chelsea, Mass.

Lieut. (jg) William L. Thomas to a Residency in Obstetrics and Gynecology at the Naval Hospital, Oakland, Calif.

# PUBLIC HEALTH SERVICE

## $1,200,000 FOR HEART DISEASE RESEARCH

Grants of more than $1,200,000 by the National Heart Institute to support research on heart disease in medical schools and hospitals were announced July 15 by the Federal Security Administration. The grants were approved by Surgeon General Scheele of the Public Health Service following recommendation by the National Advisory Heart Council. According to Dr. C. J. Van Slyke, director of the National Heart Institute, the grants comprise only a portion of the federal funds to be awarded for such research during the current fiscal year. Additional grants for new research and for construction of facilities and laboratories for research are expected to be announced shortly. Awarded to finance 85 research projects now being carried on in 45 institutions, the present grants will be used to continue investigations into the causes, treatment and prevention of heart disease.

Presently under study and supported by the grants announced *are projects investigating the role of heredity in coronary* heart disease, the effect of diet on high blood pressure and arteriosclerosis and the usefulness of new drugs in helping to relieve heart disease symptoms. Evaluations and studies are also being made of instruments, such as the ballistocardiograph and the electrokymograph, to improve their usefulness as diagnostic tools in heart disease.

## HOSPITAL PROJECTS COMPLETED

The Public Health Service reports that as of May 1, 1949, 768 projects have received initial approval under the National Hospital Construction Program. Final approval had been given 336 applications out of this total, and these are out on bid or under contract. The total cost of the 336 applications was estimated at $185,256,278, of which the federal share was estimated at $56,974, 839. The following fourteen of the projects have been completed and are in operation:

| Location | Facility | Total Cost | Federal Share |
|---|---|---|---|
| Birmingham, Ala. | Jefferson County Health Center | $996,470 | $332,156 |
| Live Oak, Fla. | Suwanee County Hospital | 308,242 | 93,685 |
| Franklin, Ga. | Heard County Memorial Hospital | 15,525 | 5,175<br>(equipment only) |
| Baltimore | State Bacteriology Laboratory | 100,440 | 33,480 |
| West Point, Miss. | Clay County Health Center | 70,249 | 23,083 |
| Cut Bank, Mont. | Glacier County Memorial Hospital | 297,692 | 98,244 |
| Hebron, Neb. | Thayer County Memorial Hospital | 86,817 | 12,939<br>(equipment only) |
| *Ahoskie, N. C.* | *Roanoke-Chowan Hospital* | *139,652* | *46,550* |
| Oklahoma City | State Health Department Laboratory | 65,847 | 21,449 |
| Nowata, Okla. | Nowata Hospital | 149,418 | 48,139 |
| Oklahoma City | Edwards Memorial Hospital (Negro) | 125,550 | 41,850<br>(equipment only) |
| State Park, S. C. | South Carolina State Hospital (Mental) | 17,785 | 5,928<br>(steam plant) |
| Anderson, S. C. | Anderson County Health Center | 164,002 | 54,667 |
| Marshall, Texas | Kahn Memorial Hospital | 94,451 | 31,483 |

# VETERANS ADMINISTRATION

## 23,260 VETERANS STUDY MEDICINE

A Veterans Administration study of the principal courses and employment objectives of 2,535,385 veterans enrolled in schools and job training establishments under the G.I. Bill and Public Law 16 on Dec. 1, 1948 shows that veteran-students in the medical sciences represented 3 per cent of the total number of all trainees. Of the 78,143 veterans enrolled under the G.I. Bill, more than one third, or 23,260, were taking courses in medicine and surgery. The rest were studying in the following fields:

| | |
|---|---|
| Dentistry | 7,603 |
| Nursing | 3,955 |
| Osteopathy | 918 |
| Pharmacy | 11,668 |
| Veterinary medicine | 2,036 |
| Chiropractic | 3,287 |
| Optometry | 3,374 |
| Chiropody | 1,107 |
| Physical therapy | 325 |
| Occupational therapy | 156 |
| Laboratory technic | 1,240 |
| Dental hygiene | 103 |
| Dental mechanics | 2,738 |
| Medical service | 250 |
| Public health | 399 |
| Bacteriology | 600 |

Premedical, predental and preveterinary students numbered 14,784. Seventy per cent of these, or 10,487, were in premedical courses.

Under Public Law 16—an act providing training for those with service-connected disabilities—veterans training in the medical professions numbered 5,168.

Of these, 1,540 were enrolled in medical courses; 1,207, pharmacy; 904, dentistry; 505, chiropracty; 469, veterinary; 194, nursing, and 349, medical services.

Eligibility for G.I. Bill training consists of (1) active military service some time between Sept. 16, 1940, and July 25, 1947; (2) service of at least 90 days, or a discharge for a service-connected disability if released before 90 days' service, and (3) a discharge under conditions other than dishonorable. For Public Law 16, requirements are (1) military service between the 1940 and 1947 dates; (2) a discharge other than dishonorable; (3) a compensable service-connected disability, and (4) VA's determination that training is necessary to overcome a handicap. While in training, veterans may receive a subsistence allowance from VA.

## NEW HOSPITAL ON CHICAGO'S WEST SIDE

The Veterans Administration is accepting bids for the construction of a 500 bed Veterans Administration general hospital in the medical center district on Chicago's west side. After July 20, drawings and specifications may be obtained by writing to the Technical Service, Veterans Administration, Washington, D. C. There will be a main hospital building, 4,274,000 cubic feet in size, recreation hall and chapel, nurses' quarters, apartment, boiler house, electrical substation, attendants' quarters and connecting corridor. The buildings will have brick-faced exterior walls with stone trim backed with hollow tile, and reinforced concrete floors.

## PERSONALS

Dr. George T. McMahan has been appointed manager of the Veterans Administration Center in Waco, Texas, and Dr. William K. Freeman as manager of the Hospital in Gulfport, Miss. Dr. McMahan served four years in the Army during World War II and Dr. Freeman has been with the Veterans Administration for the last thirteen years.

Miss Dorothy Rouse has been appointed chief of occupational therapy for the Veterans Administration Physical Medicine Rehabilitation Service. Miss Rouse has been with the Veteran's Administration and its predecessor organizations since 1919.

Elon Henry Clark, former assistant professor of medical art and photography at Duke University, has joined the Veterans Administration's Department of Medicine and Surgery as Chief, medical art photography section, research and education service.

The following physicians have been added to the staff of the regional office of the Veterans Administration at Boise, Idaho: Raymond P. Westover, Basil Duke Buford and Hans J. Feitis.

Dr. Leslie H. Wright has been appointed manager of the McGuire Veterans Hospital at Richmond, Va., succeeding Dr. Edmund M. Ellerson, who becomes chief of professional services at the Veterans Hospital, Alexandria, La.

Dr. Peter A. Volpe became manager of the Veterans Hospital at Dwight, Ill., on July 1, succeeding Dr. Septimus T. Taylor, who retired. Dr. Volpe is a grdauate of Ohio State University College of Medicine and is certified by the American Specialty Board in Physical Medicine.

# Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

## CALIFORNIA

**Dr. Northrop Appointed Visiting Professor.**—John Howard Northrop, Ph.D., Nobel Laureate, has been appointed visiting research professor of bacteriology on the Berkeley campus of the University of California. Dr. Northrop comes to Berkeley under a special arrangement between the university and the Rockefeller Institute for Medical Research. Dr. Northrop is one of the world's pioneers in the chemistry of the proteins. He achieved the first crystallization of the proteolytic enzymes.

**Diphtheria in San Francisco.**—A total of 93 local and 3 nonlocal cases of diphtheria were reported in San Francisco during 1948, with 18 deaths in the local series of cases and 1 death in the nonlocal group. This is the highest incidence reported since 1932, when 113 local cases were reported. The death rate for the past year, 2.2 per 100,000 population, is the highest since 1930. The case fatality rate for the year was 19.3. Sex distribution in cases shows 74 per cent males and 26 per cent females. The continued shifting of cases into the older age groups is again evident. More than one half of the cases for the year were in the age groups over 40, with 43 per cent of them in the first three five-year periods. Only 8 per cent of the patients were not hospitalized, and these were for the most part patients who died before hospital care could be provided. In only 12 of the 93 cases was there any history of immunization. With a definite program of immunization operating in the public schools, it is a matter of concern that only about one third of the school and preschool groups definitely stated that immunization had been done. Seven persons were not treated, and 5 of these died. In the local series of cases there were five instances where 2 or more members of a family were ill with diphtheria. In five other instances 2 or more cases not family contacts were found at the same address. It is evident that in San Francisco diphtheria is becoming increasingly a disease of the adult and is not recognized clinically as such soon enough.

## COLORADO

**Cancer Seminar at Colorado Springs.**—The Glockner-Penrose Hospital, Colorado Springs, is sponsoring a cancer seminar to be held at the Broadmoor Hotel September 10. The State Society of Pathologists in Colorado and the regional section of the College of American Pathologists are co-sponsors. The seminar will be conducted by Dr. Arthur P. Stout, Columbia University, New York, and Dr. Lauren V. Ackerman, Washington University, St. Louis. Fifteen cases of histologic problems in the field of tumors will be chosen for discussion. Physicians wishing to present a case problem of histologic diagnosis should send a slide and a short summary of the case to Dr. Juan A. del Regato, director of the hospital. It will be submitted to the guest speakers, who will decide on the cases that are to be presented.

## ILLINOIS

**Maternal Welfare Committee.**—At a meeting June 29 the Joint Maternal Welfare Committee of Cook County elected Drs. Fred L. Adair honorary chairman, Joseph L. Baer chairman and Frank F. Maple co-chairman. This committee has worked closely for more than 10 years with the Chicago Board of Health by assisting in the determination of the rules and regulations for the operation and conduct of hospital maternity departments.

### Chicago

**Dr. Holinger to Lecture in Europe and South America.**—Dr. Paul H. Holinger, associate professor of otolaryngology, University of Illinois College of Medicine, Chicago, left July 7 for a two month speaking tour of Europe and South America. He presented four endoscopic films before the International Congress of Otolaryngology in London and a paper on "Endoscopic Photography in Otolaryngology and Bronchoesophagology" and also gave two lectures in Lisbon, Portugal, July 25 and 26. Dr. Holinger has been invited to serve as honorary president of the Argentine Congress of Bronchoesophagology, which will be held in Sante Fe on August 15 and 16. The Argentine Society of Broncho-Esophagology, through its president, Dr. Irigoyen Freyre, also has invited him to give two courses in bronchoesophagology at the medical school in Sante Fe. While in South America he will lecture at Cordoba, Buenos Aires, Porto Alegre and Rio de Janeiro. He plans to return to the United States in September.

**Michael Reese Hospital Expansion.**—Ground was broken June 27 with ceremonies which marked the launching of construction of Michael Reese Hospital's $1,850,000 Institute for Psychosomatic and Psychiatric Research and Training. The institute will be the second major hospital building to be constructed in the long range enlarged medical center plan of Michael Reese. Also scheduled for early construction are a private pavilion for medical and surgical patients and a convalescent hospital. The Institute for Psychosomatic and Psychiatric Research and Training has been functioning since 1946.

**Cardiovascular Research.**—The Chicago Heart Association on July 1 assigned the following grants totaling $114,300 to local institutions engaged in cardiovascular research: $18,300 to the University of Chicago; $5,000 to the Cardiovascular Research Institute of Michael Reese Hospital; $10,000 to the University of Illinois College of Medicine; $35,000 to the Rheumatic Fever Research Institute of Northwestern University; $10,000 to the Stritch School of Medicine of Loyola University; $25,000 to LaRabida Jackson Park Sanitarium; $10,000 to Herrick House, and $1,000 to cover cost of nose and throat cultures in connection with Dr. Kate Kohn's study of the use of oral penicillin to prevent recurrence of rheumatic fever. The association expects to make additional research grants later in the year from contributions to its 1949 fund drive.

## INDIANA

**Emergency Medical Service.**—A survey by the Indiana State Medical Association has revealed that seventy-five of the eighty-three Indiana county medical societies have established round-the-clock medical service. Of the eight counties which did not report any such arrangement, seven were rural and only one a metropolitan area.

**Immunization Letters to Parents.**—The Madison County Medical Society in cooperation with the Anderson City and the Madison County Health Department is sending a special letter to parents of all babies who have reached their six month birthday. It is a reminder to the parents to see the family physician about the child's immunization and suggests a possible schedule to follow for protection against diphtheria, whooping cough and smallpox.

## IOWA

**Personals.**—Dr. Harold W. Morgan, Mason City, has been awarded a bronze medal in recognition of his services in furthering the cancer control program in Iowa.——Dr. William C. Goenne, Davenport, was elected president of the Iowa Clinical Surgical Society in April.

**Committee to Act as Dean of Medical School.**—Following the recent death of Dr. Mayo H. Soley, dean of the University of Iowa Medical School, President Virgil M. Hancher appointed an executive committee to carry on the administrative functions of the college of medicine. The committee consists of Dr. Robert Tidrick of the department of surgery as chairman, Dr. Willis Fowler of the department of medicine, Dr. Rex Ingram of the department of anatomy, Dr. Emory Warner of the department of pathology and Dr. Wilbur R. Miller of the department of psychiatry. The executive committee is authorized to exercise all of the powers and perform all of the functions of the dean until a permanent dean can be appointed or until a better interim solution can be found.

## KENTUCKY

**Cancermobile.**—The state department of health is to receive from the U. S. Public Health Service $16,240, which will aid in the activities of the Cancermobile, which travels through rural areas of Kentucky to aid in early diagnosis. The $4,950 allotted the University of Louisville School of Dentistry will be used to promote special lectures on cancer and to train junior and senior students to recognize cancerous or precancerous conditions of the mouth and face.

**Personals.**—Dr. Milton Davis Jr., associate professor of anesthesiology at the University of Louisville School of Medicine, has submitted his resignation effective June 30.——Dr. Joseph A. Little has been appointed pediatrics consultant to Dr. Cathryn C. Rotondo of the Maternal and Child Health Division of the Kentucky State Department of Health effective July 1. He plans to put on a state child-health program in cooperation with other divisions of the state health department and will teach pediatrics at the University of Louisville School of Medicine. During World War II he was stationed at Army Air Force hospitals at Randolph Field, Texas, and Hamilton Field, California. Later he was pediatrics resident and director of the outpatient department and instructor in pediatrics at Children's Hospital, Cincinnati.

## MINNESOTA

**Dr. Wangensteen Awarded Prize.**—On July 14 the College of Physicians of Philadelphia awarded the Alvarenga Prize for 1949 to Dr. Owen H. Wangensteen, director of the department of surgery, University of Minnesota Medical School, Minneapolis, for his contributions to the etiology and therapy of gastric and duodenal ulcers. Dr. Wangensteen will deliver the Alvarenga Lecture on this subject at the College of Physicians of Philadelphia on November 2. The Alvarenga Prize was established by the will of Pedro Francisco DaCosta Alvarenga of Lisbon, Portugal, an associate fellow of the College of Physicians of Philadelphia, to be awarded annually by the College of Physicians on the anniversary of the death of the testator, July 14, 1883.

**Alumni Gift to Medical Library.**—The purchase of historical books for the medical library at the University of Minnesota was made possible in July when $3,735 was presented to the Friends of the University of Minnesota Library. This gift of the university's medical school classes of 1922-1923 was raised by a committee headed by Dr. Owen H. Wangensteen, director of the department of surgery at the university, during the 1948 and 1949 campaigns of the Greater University Fund. The friends of the library group will carry out the arrangements for buying these historical medical materials. Erritt W. McDiarmid, Ph.D., university librarian, said that the gift "will be of especial value and significance because it will enable the library to acquire some of the outstanding books in the history of medicine that it normally could not purchase with current heavy demand for journals, monographs and other medical materials."

## MONTANA

**Society News.**—The Montana Academy of Eye, Ear, Nose and Throat Specialists elected Dr. James H. Herring, Lewistown, as president, and Dr. Fritz D. Hurd, Great Falls, as secretary-treasurer.

**State Board of Health.**—Dr. Edward S. Murphy of Missoula was elected president of the Montana Board of Health July 1. The 1949 state legislature completely reorganized the health department, voting that its membership should consist of three doctors, a dentist and three laymen. The board formerly was composed of five doctors, a state pharmacy board representative and one member of the state food distribution association. Other physicians on the board are Dr. Brownlow C. Farrand, Jordan, and Dr. Burton K. Kilbourne, Helena, executive secretary.

## OHIO

**Cleveland Health Museum.**—The Veterans' Administration has renewed its contract with the Cleveland Health Museum for "Research in Development of Three-Dimensional Anatomical Models," as requested by Dr. Paul B. Magnuson, chief, medical director, Veterans' Administration. Work is being done in the Health Museum studios with the cooperation of Drs. Normand L. Hoerr and Carl C. Francis, department of anatomy, Western Reserve University School of Medicine, Cleveland.

## PENNSYLVANIA

**New General Hospital.**—The new Ohio Valley General Hospital, built by local residents at a cost of over a million dollars, opened June 27 in McKees Rocks. The hospital has a capacity of 135 beds and 35 bassinets. The old building, which has served the residents since 1900, will be abandoned for hospital purposes. The hospital will serve McKees Rocks, Stowe and Kennedy townships, all of which joined in raising money for the building.

**Anesthesiologists Meeting.**—The Pennsylvania State Society of Anesthesiologists will hold its annual meeting at the William Penn Hotel, Pittsburgh, September 29-October 1. Among the guest speakers are: Lloyd H. Mousel, Washington, D. C., "Pre-operative Preparation and Choice of Anesthetic Agents," and Henry K. Beecher, Boston, "Acidosis and Anesthesia." On September 30 members of the U. S. Bureau of Mines will discuss combustible anesthetic agents and their control. A panel discussion on pediatric anesthesia will take place aturday morning with Drs. Charles H. Robson, Toronto, anada; William O. McQuiston, Peoria, Ill., and James E. kenhoff, Philadelphia, participating.

**Veteran Physicians Honored.**—Four physicians who have completed fifty years of medical service were honored by their colleagues July 21 at the annual meeting of the Eleventh Councilor District of the Medical Society of the State of Pennsylvania at the Somerset Country Club. Dr. E. R. Roger Samuel, Mount Carmel, president-elect of the state medical society, presented fifty year awards to Drs. William A. Prideaux, Twin Rocks; J. French Kerr, Connellsville; Lewis N. Reichard, Brownsville, and Audley O. Hindman, Burgettstown. Dr. David L. McCarrell, of Hickory, who died last March, had also practiced fifty years. Dr. Thomas J. O'Neill, of Hahnemann Medical College and Hospital of Philadelphia, and Dr. Robert C. Grauer, of the University of Pittsburgh, were visiting speakers. Mr. Lester H. Perry, Harrisburg, executive secretary of the state society, and Mr. Leo E. Brown, Harrisburg, of the Committee on Public Relations of the state society, spoke on the campaign against socialized medicine.

### Philadelphia

**Personal.**—On June 7 William N. Parkinson, dean, Temple University Medical School and Hospital, was awarded the honorary degree of Doctor of Science by the Pennsylvania Military College, Chester, Pa.

**Gift to Temple University.**—Dr. Theodore L. Chase of Reno, Nev., who contributed $1,000,000 to establish the Agnes Barr Chase Surgical Research Foundation in memory of his wife, has made an additional gift of $400,000 for the new building to be erected at the Temple University Medical Center.

**Bequest for Medical Research.**—In the will of the late A. Atwater Kent, philanthropist and retired radio manufacturer, the University of Pennsylvania School of Medicine and Jefferson Medical College, Philadelphia, will each receive $250,000 for medical research. The gifts, to be held in trust, are to be paid each institution annually until the funds are exhausted.

**Gabriel Tucker Fund for Research.**—A patient who underwent successful surgery at the University of Pennsylvania's Graduate School of Medicine has made a gift anonymously to the university of $200,000, the proceeds of which are to be used for the advancement of medicial science. It will be known as "The Gabriel Tucker Fund for Bronchology, Esophagology and Laryngeal Surgery."

**Samuel D. Gross Essay Prize.**—The Philadelphia Academy of Surgery will present its Samuel D. Gross essay prize of $1,500 in 1950. The prize is awarded every five years to the writer of the best original essay on a subject in surgical pathology or surgical practice founded on original investigations, the candidates for the prize to be American citizens. The competitor who receives the prize must publish his essay in book form. The essay must be written by a single American citizen and sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 South 22nd Street, Philadelphia," on or before Jan. 1, 1950. Each essay must be typewritten, distinguished by a motto and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelop will be opened except that which accompanies the successful essay. The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

## TEXAS

**Dr. Sunderman to Head Clinical Pathology Department.**—Dr. F. William Sunderman, physician, educator and research worker, has assumed duties as director of clinical research and head of the department of clinical pathology at the University of Texas' M. D. Anderson Hospital for Cancer Research, Houston; in addition, he has been appointed professor of experimental medicine and clinical pathology at the University of Texas Postgraduate School of Medicine. Dr. Sunderman came to Houston from Cleveland, where he was head of the department of clinical pathology at the Cleveland Clinic Foundation. Dr. Sunderman is currently vice president of the American Board of Pathology. For services rendered during World War II he received the Naval Ordnance Development Award and a War Department and Navy Department citation.

## WASHINGTON

**Personal.**—The Pacific Northwest Dermatological Society, meeting in Seattle in May, installed Dr. Robert L. Howard, Spokane, as president.

**Graduate Course in Obstetrics and Pediatrics.**—The Washington State Medical Association, the State Department of Health and the School of Medicine of the University of Washington will present postgraduate courses in obstetrics and pediatrics at King County Hospital in Seattle, August 8-12. The registration fee, $25, should be sent to the Washington State Medical Association, 338 White-Henry-Stuart Building, Seattle 1.

## WEST VIRGINIA

**Hospitals Licensed.**—At the end of the first year of operation under the state's new hospital-licensing law, 86 hospitals in West Virginia have been approved and are operating under licenses granted by the state health department. Of this number 69 are general hospitals, 9 eye, ear, nose and throat, 4 orthopedic, 2 tuberculosis, 1 maternity and 1 chronic disease hospital. In addition to the hospitals, licenses have been granted to 5 clinics and 22 nursing homes.

**Heart Disease Clinic for Indigents.**—A diagnostic clinic for indigents suffering from cardiovascular diseases has been established in Charleston by the West Virginia Heart Association. The clinic meets each Tuesday at noon in the Kanawha-Charleston health department, and patients are seen by appointment. A similar clinic is operating in Wheeling. Plans are under way to use equipment of the rheumatic fever project of the state health department in Fairmont to expand diagnostic services in northern West Virginia to all age groups. Another diagnostic clinic is also planned for Huntington.

**Occupational Disease Board.**—An occupational disease medical board has been appointed by Curtis B. Trent Jr., compensation commissioner, under the provisions of a bill amending the Workmen's Compensation Act, passed at the regular session of the 1949 Legislature. The board will be composed of Dr. John C. Condry of Charleston, chairman, who will serve a one year term, and Dr. James L. Patterson of Logan, who is appointed for a three year term. Subsequent appointments to the board will be for full three year terms. The members of the board took office July 1, and an organization was to be set up at a meeting scheduled for July 21. Under the amended act the coverage of Workmen's Compensation is extended to all occupational diseases. The old law provided coverage for only silicosis and accidental injuries.

## GENERAL

**Award Osler Medal.**—The American Association of the History of Medicine at its annual meeting held in Lexington, Ky., May 22-24, awarded the William Osler Medal to Mr. Charles Van Arsdall, a fourth year student at Johns Hopkins University School of Medicine, Baltimore, in recognition of his essay on "A Medical History of the Harrodsburg Springs."

**Vitamin Foundation Grants.**—Six new grants-in-aid have been announced by the National Vitamin Foundation for research on the effects and significance of vitamins to health and resistance to disease. The awards bring to $190,828 the financial aid extended to scientists and institutions by this nonprofit, research organization supported by leading chemical and pharmaceutic concerns.

**Biological Photographic Association.** — The nineteenth annual meeting of the Biological Photographic Association, Inc., will be held in Cleveland, September 7-10, at the Hotel Cleveland. The preliminary agenda calls for one afternoon to be spent at Nela Park, the research laboratories of General Electric and the home of Horizon House, where the latest in lighting will be demonstrated.

**Personals.**—Dr. Paul M. Wood, New York, resigned January 1 as president of the American Board of Anesthesiology and was succeeded by Dr. Charles F. McCuskey, Los Angeles. ——The Board of Scientific Directors of the Rockefeller Institute for Medical Research has announced that Walter A. Jacobs, Ph.D., New York, and Louis O. Kunkel, Ph.D., Princeton, N. J., who have reached the age of retirement, have been made members emeriti of the institute.

**Joins Tuberculosis Association Staff.**—Dr. Floyd M. Feldmann, Washington, D. C., will join the staff of the National Tuberculosis Association this summer as assistant to the managing director, Dr. James E. Perkins, Bronxville, N. Y. Dr. Feldmann is medical director, central Coordination and Analysis Office, and executive secretary, Tuberculosis Study Section, U. S. Public Health Service. He has been epidemiologist for the Minnesota Department of Health.

**Nineteen Fellowship Awards.**—The National Research Council has announced the award of nineteen fellowships in the medical sciences. These fellowships are supported by an appropriation of the Rockefeller Foundation and are designed to give special facilities for training in research to persons who wish to devote themselves to an investigative career in the medical sciences. Such awards are intended for recent graduates who are not professionally established.

**Tuberculosis Academy Awards.**—At the annual meeting of the American Academy of Tuberculosis Physicians in Atlantic City, June 4, gold keys were awarded to Drs. Robert A. Peers, Colfax, Calif.; Charles F. Taylor, Norton, Kan., and Zoltan Galambos, Chicago. In addition, a certificate was presented to Dr. Camille Kereszturi Cayley, New York, honoring her for her pioneer work in BCG vaccination.

**American Board of Obstetrics and Gynecology.**—The annual meeting of the American Board of Obstetrics and Gynecology was held in Chicago May 8-14, at which time 236 candidates were certified. The next scheduled examination (Part I), written examination and review of case histories, for all candidates will be held in various cities of the United States and Canada on Feb. 3, 1950. Application may be made until November 5. Application forms are sent on request to the board, 1015 Highland Building, Pittsburgh 6, Pa.

**Prevalence of Poliomyelitis.**—Reports of cases of poliomyelitis for the periods indicated have been received from the Division of Public Health Methods, U. S. Public Health Service:

| | Week Ended | | | Total to | | Total * | |
|---|---|---|---|---|---|---|---|
| | July 16, 1949 | July 17, 1948 | Median Expec. | July 16, 1949 | July 17,1948 | March 19-July 16, 1949 | March 20-July 17, 1948 |
| New England States: | | | | | | | |
| Maine | 13 | 1 | 1 | 34 | 1 | 34 | 1 |
| New Hampshire | 2 | .. | .. | 3 | .. | 3 | .. |
| Vermont | .. | .. | .. | 3 | 3* | 1 | 2† |
| Massachusetts | 19 | 1 | 2 | 69 | 9 | 69 | 6 |
| Rhode Island | .. | .. | .. | 2 | .. | 2 | .. |
| Connecticut | 11 | 1 | 2 | 26 | 5 | 23 | 4 |
| Middle Atlantic States: | | | | | | | |
| New York | 72 | 19 | 19 | 156 | 106 | 136 | 70 |
| New Jersey | 14 | 9 | 6 | 85‡ | 59 | 49‡ | 52 |
| Pennsylvania | 7 | 11 | 7 | 42 | 50 | 32 | 39 |
| East North Central States: | | | | | | | |
| Ohio | 22 | 25 | 13 | 53 | 85 | 47 | 76 |
| Indiana | 52 | 8 | 3 | 107 | 52 | 97 | 42 |
| Illinois | 55 | 14 | 14 | 129 | 59 | 113 | 52 |
| Michigan | 32 | 5 | 5 | 101 | 27 | 74 | 21 |
| Wisconsin | 5 | 6 | 3 | 43 | 17 | 29 | 17 |
| West North Central States: | | | | | | | |
| Minnesota | 51 | 9 | 5 | 186 | 31 | 147 | 23 |
| Iowa | 30 | 2 | 2 | 80 | 94 | 67 | 81 |
| Missouri | 40 | 5 | 5 | 98 | 20 | 87 | 20 |
| North Dakota | 16 | 1 | 1 | 46 | 4 | 42 | 4 |
| South Dakota | 5 | 4 | .. | 48 | 30 | 26 | 30 |
| Nebraska | 13 | 15 | 5 | 49 | 71† | 36 | 66† |
| Kansas | 19 | 9 | 5 | 92 | 35 | 66 | 32 |
| South Atlantic States: | | | | | | | |
| Delaware | .. | 13 | .. | 10 | 23 | 8 | 22 |
| Maryland | 2 | 2 | 2 | 16 | 3 | 7 | 2 |
| District of Columbia | 1 | 3 | 1 | 5 | 6 | 4 | 6 |
| Virginia | 4 | 15 | 7 | 25 | 53 | 15 | 51 |
| West Virginia | 9 | 3 | 3 | 47 | 10 | 40 | 5 |
| North Carolina | 5 | 195 | 3 | 68 | 684 | 41 | 660 |
| South Carolina | 1 | 8 | 5 | 29 | 39 | 16 | 31 |
| Georgia | 11 | 8 | 8 | 44 | 47 | 36 | 46 |
| Florida | 3 | 10 | 7 | 82 | 77 | 69 | 60 |
| East South Central States: | | | | | | | |
| Kentucky | 20 | 10 | 5 | 62 | 31 | 54 | 28 |
| Tennessee | 21 | 10 | 7 | 81 | 42 | 75 | 35 |
| Alabama | 8 | 6 | 6 | 83 | 41 | 70 | 29 |
| Mississippi | 17 | 10 | 6 | 95 | 28 | 84 | 26 |
| West South Central States: | | | | | | | |
| Arkansas | 101 | 5 | 3 | 328 | 29 | 317 | 27 |
| Louisiana | 8 | 2 | 2 | 77 | 41 | 65 | 35 |
| Oklahoma | 74 | 13 | 8 | 345 | 59† | 338 | 53 |
| Texas | 112 | 75 | 45 | 1,019 | 810 | 928 | 789 |
| Mountain States: | | | | | | | |
| Montana | .. | .. | .. | 8 | 15 | 7 | 5 |
| Idaho | 14 | 1 | 1 | 80 | 52 | 67 | 25 |
| Wyoming | .. | .. | .. | 7 | 7 | 7 | 7 |
| Colorado | 12 | 2 | 2 | 40 | 13 | 38 | 11 |
| New Mexico | 6 | 3 | .. | 31 | 12 | 30 | 10 |
| Arizona | 3 | 3 | 1 | 26 | 22 | 15 | 21 |
| Utah | 2 | 1 | .. | 55 | 12 | 39 | 9 |
| Nevada | 3 | .. | .. | 5 | 1 | 5 | .. |
| Pacific States: | | | | | | | |
| Washington | 12 | 7 | 5 | 91 | 49 | 46 | 31 |
| Oregon | 6 | 1 | 2 | 56 | 26 | 40 | 10 |
| California | 83 | 164 | 22 | 628 | 611 | 339 | 579 |
| Total | 1,016 | 716 | | 4,895 | 3,601† | 3,971 | 3,251† |
| Median, 1949-1948 | .... | ... | 427 | 1,752 | | 1,489 | |

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* Last two columns show reported incidence since approximate average seasonal low: 17 weeks.

† Figures changed by corrected reports.

‡ Correction: New Jersey, week ended May 7, 3 cases instead of 5.

**Smallpox in the United States.**—The June issue of the *Statistical Bulletin* of the Metropolitan Life Insurance Company reports that 59 cases of smallpox were reported in the United States in 1948, a new low record; 14,939 were reported in the United States in 1938. In 1948, 27 states and the District of Columbia were entirely free from smallpox. The reduction of smallpox cases in 1948 is not continuing in 1949. Through May there were 49 cases this year as compared with 45 in the like period of 1948. Missouri and Texas each reported 8 cases and Kansas and Mississippi 5 each.

**Occupational Therapy Consultant.**—Frances Helmig, director of the Rochester (N. Y.) Rehabilitation Center, has been appointed occupational therapy consultant for the National Society for Crippled Children and Adults effective July 1. The society has more than 2,000 state and local affiliated units and more than 80 centers specializing in cerebral palsy, in addition to other services for the handicapped. Miss Helmig will act as consultant to these units in developing further services. She also has served as head of the Occupational Therapy Department of the Naval hospital at Philadelphia.

**Southern Anesthesiologists Organize.**—At an organization meeting in Washington, D. C., April 8, the Southern Society of American Anesthesiologists was formed. It includes the territory east of the Mississippi and south of the Mason-Dixon Line, plus Missouri, Arkansas, Oklahoma and Texas. Officers elected were Drs. Perry P. Volpitto, Augusta, Ga., president; Harvey C. Slocum, Galveston, Texas, president-elect, and John Adriani, New Orleans, secretary. The group will meet each year in conjunction with the Southern Medical Association. At the same meeting, the old Southeastern Section of the American Society of Anesthesiologists was disbanded.

**Coulee Dam Needs Two Doctors.**—The U. S. Bureau of Reclamation is seeking two doctors for the Grand Coulee Dam Area in eastern Washington—population about 7,500. General practitioners with special interests in internal medicine, surgery, pediatrics or obstetrics are needed. The bureau has a building in Coulee Dam with about 1,200 square feet of space available to doctors. The government will contribute up to $15,000 toward the cost of remodeling the building into offices as desired by the new tenants. Bids from two doctors will be opened September 15. Housing will be made available. For details write to the District Manager, United States Bureau of Reclamation, Coulee Dam, Washington.

**Mississippi Valley Essay Contest.**—Dr. Seymour H. Rinzler, adjunct in medicine and cardiology, Beth Israel Hospital, New York, and instructor in rehabilitation, New York University, is the winner of the annual essay contest of the Mississippi Valley Medical Society "for the best unpublished essay on a subject of practical and applicable value to the general practitioner of medicine." Dr. Rinzler's paper is entitled, "Present Status of Medical and Surgical Therapy in Angina Pectoris." Second prize goes to Dr. Edward D. Robbins of the University of Chicago for his essay "Hypometabolism on Hypothyroidism," and third prize to Dr. Wallis L. Craddock, Ft. Logan, Colo., for his paper "The Problem of Histoplasmosis." Dr. Rinzler will receive a cash award and a gold medal and will present his essay at the annual meeting of the society in St. Louis, September 28-30.

**Medical Personnel for Relief Projects.**—The American Friends Service Committee is interested in recruiting qualified medical personnel for its relief projects in Palestine and China. All traveling and maintenance expenses are provided, but no salaries are paid to overseas workers. The Quakers are administering relief to some 250,000 Arab refugees in Southern Palestine. Its public health program under the direction of Dr. Jerome Peterson, on loan from the World Health Organization, consists of medical and surgical work in clinics and hospitals, maternity and child welfare services and epidemic prevention and control. Of the 50 field workers of the committee in the Gaza area, 15 are medical personnel. Palestine appointments will last through Dec. 31, 1949. In China Quaker medical work is of an emergency nature, treating both civilian and army war casualties and combating epidemics. The minimum term of service is two years. Doctors interested should write Charles Read, American Friends Service Committee, 20 South Twelfth Street, Philadelphia 7, Pa.

**Congress of Otorhinolaryngology and Bronchoesophagology.**—This second Pan American congress will meet in Montevideo and Buenos Aires Jan. 8-15, 1950. At Montevideo, January 8-14, the sessions will deal with the following subjects: Frontal Sinus; Tumors of Pharynx; Buco-pharyngeal and Laryngeal Lesions Caused by Fungi or Parasites; Treatment of Cancer of the Larynx; Bronchial Obstruction in Children, and Benign Disease of the Esophagus. Three simultaneous courses will be given during the afternoon on: nose and sinuses, pharynx and larynx and bronchoesophagology. Sessions at Buenos Aires January 13-14, during the afternoons, will take up word hearing; acuophone and acuometer, and otosclerosis. Simultaneous courses will be given on inflammatory infections of the ear and their complications, and otosclerosis. The subscription is $10 or its equivalent in Uruguayan money. The week following the courses, January 16-21, operative demonstrations will take place in Montevideo and Buenos Aires. All interested should communicate at once with the delegate in the United States and Canada, Dr. Chevalier L. Jackson, 3401 North Broad Street, Philadelphia 40, Pa.

**National Foundation Scholarships and Fellowships.**—The National Foundation for Infantile Paralysis will continue to award scholarships and fellowships in physical medicine, public health, medical social work and physical therapy under recently approved appropriations totaling $495,000. A limited number of clinical fellowships in physical medicine are available to physicians who wish to prepare for eligibility for certification by the American Board of Physical Medicine. The fellowships, for which $100,000 has been allocated, will cover a period of one, two or three years of clinical study, depending on individual needs. Fellowships are available to physicians for one year of graduate study leading to the degree of Master of Public Health. This study requires one year at a school of public health approved by the American Public Health Association; $50,000 has been set aside for this project. Physical therapy scholarships are available to men and women who need financial assistance to complete training in schools approved by the Council on Medical Education and Hospitals of the American Medical Association; $225,000 has been provided for this purpose. Medical social work scholarships are available to students accepted as degree candidates by an accredited school of social work. Also available are a number of scholarships for students who need more than a year of graduate study to receive a Master's degree in medical social work; $100,000 will finance this project. Fellowships of two to four weeks' duration are also being offered to about fifty residents in orthopedics and pediatrics to study treatment of patients with poliomyelitis in courses to be given at Children's Hospital in Boston, City Hospital in Cleveland, University of Colorado Medical Center in Denver and Stanford University School of Medicine in San Francisco; $20,000 has been provided for this training. All scholarships and fellowships are awarded on the recommendations of a committee and are on a competitive basis. Information may be obtained from the Division of Professional Education, National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y.

## FOREIGN

**Dr. Trueta Appointed Nuffield Professor.**—Dr. Josep Trueta, surgeon at the Wingfield Morris Orthopaedic Hospital in Oxford, England, since 1941, has been appointed Nuffield Professor of Orthopaedic Surgery at the University of Oxford. Dr. Trueta was educated at Barcelona Institute and University.

**Symposium of Neutroadiologicum.**—This symposium meeting in Rotterdam September 13-17 will deal with skull roentgenology, arteriography, encephalography, ventriculography and myelography. Those who wish to participate should send their names not later than July 31 to the Secretary of the Symposium Neuro-radiologicum, Rotterdam (Holland), who can also furnish all information.

## CORRECTION

**Personal.**—Dr. Francis C. Lowell, associate professor of medicine at Boston University School of Medicine, has been appointed assistant dean at the university, and not at Harvard Medical School as was stated in The Journal July 16, page 967.

# Marriages

Catherine Burkhart to Mr. Robert D. McAuliffe, both of Syracuse, N. Y., April 21.

John Joyce Sayen, Wynnewood, Pa., to Miss Anne Elizabeth Read of Bryn Mawr, May 21.

Bernard Drexler to Miss Bessie Poze, both of Rochester, N. Y., at Miami, Fla., April 11.

Robert C. Waltz, East Cleveland, Ohio, to Miss Frances Elaine Woosley of London, June 1.

# Deaths

**Ralph Pemberton** ⊕ charter member of the Council on Physical Therapy of the American Medical Association, died at his home in Paoli, Pa., June 17, aged 71, of coronary occlusion. Dr. Pemberton was born in Philadelphia Sept. 14, 1877. He was educated at the University of Pennsylvania, where he also received his degree in medicine in 1903. Later he studied in Berlin and at the University of Strasbourg. In 1905 he began practice in Philadelphia and became an instructor in medicine at his alma mater, serving from 1907 to 1910. In 1928 he was made an associate professor of medicine and in 1931 professor at the Graduate School of Medicine, University of Pennsylvania. He was president of the Ligue Internationale Contre le Rhumatisme and since 1944 of the Pan-American League for the Study and Control of Rheumatic Diseases. From 1927 to 1935 he was chairman of the American Committee for Control of Rheumatism and in 1938-1939 president of the American Rheumatism Association. He was a fellow of the American College of Physicians and the College of Physicians of Philadelphia and a member of the American Institute of Nutrition, the Academy of Natural Sciences, International Society of Medical Hydrology, the Military Order of the Loyal Legion of the United States, American Society for Clinical Investigation and the American Academy of Physical Medicine, which in 1946 awarded him the gold key. In 1939 he was presented the Meritorious Service Medal by the Commonwealth of Pennsylvania. He was an honorary fellow of the Royal Society of Medicine in London and an honorary member of various medical societies throughout the world. During World War I Dr. Pemberton served as a major in the medical corps of the U. S. Army. He has been national consultant in rheumatism and arthritis under the program of Wartime Graduate Medicine Meetings since 1943 and chairman of the Philadelphia Department of Health's committee on rheumatic diseases since 1944. He was a specialist certified by the American Board of Internal Medicine and at various times associated with the University, Presbyterian, Philadelphia General, Abington (Pa.) Memorial and Chester (Pa.) hospitals. Dr. Pemberton wrote "Arthritis and Rheumatoid Conditions," a volume translated into French. With Dr. Robert B. Osgood, he wrote "Medical and Orthopedic Management of Chronic Arthritis." Besides being a contributor to other books and journals, he was an editor of a volume on "Principles and Practice of Physical Therapy."

**Charles Johnstone Imperatori** ⊕ Essex, N. Y.; born in New York Jan. 20, 1878; University and Bellevue Hospital Medical College, New York, 1899; specialist certified by the American Board of Otolaryngology; formerly professor of laryngology at the New York Post-Graduate Medical School and Hospital in New York and professor of otorhinolaryngology at his alma mater; fellow of the American Academy of Ophthalmology and Otolaryngology, American College of Surgeons, of which he was a member of the board of governors from 1942 to 1944, and the New York Academy of Medicine; past president of the American Bronchoscopic Society; past president and secretary of the American Laryngological Association; member of the American Laryngological, Rhinological and Otological Society; lieutenant colonel during World War I, serving in France as commanding officer of the 309th medical regiment, American Expeditionary Forces; for his services France decorated him with the Medaille D'Honneur Des Epidemies; during World War II a member of the division of medical sciences of the National Research Council; affiliated with Flower-Fifth Avenue, Manhattan Eye, Ear and Throat and Riker's Island hospitals in New York; consulting laryngologist at the Harlem Hospital in New York and Nyack (N. Y.) General Hospital; with Dr. H. J. Burman, author of "Diseases of Nose and Throat"; died June 15, aged 71.

**Mayo Hamilton Soley** ⊕ Iowa City; born in Malden, Mass., April 14, 1907; Harvard Medical School, Boston, 1933; interned at Massachusetts General Hospital in Boston; since 1948 dean and research professor in the department of internal medicine at the State University of Iowa College of Medicine; formerly professor of medicine and assistant dean at the University of California Medical School in San Francisco, where he was on the staffs of the University of California, San Francisco City and County and the Letterman General hospitals; member of the American Society for Clinical Investigation, Association for the Study of Internal Secretions, American Heart Association and the Society for Experimental Biology and Medicine; specialist certified by the American Board of Internal Medicine; certified by the National Board of Medical Examiners; director of medical services of the University Hospitals; died June 21, aged 42.

**George Alfred Skinner** ⊕ Colonel, U. S. Army, retired, Berkeley, Calif.; born in Osage, Iowa, June 11, 1870; Rush Medical College, Chicago, 1892; entered the medical corps of the U. S. Army in 1896; served during the Spanish-American War and World War I; chief medical officer in the Seventh Corps area in Omaha when he retired on June 30, 1934; in 1931 was awarded the Henry S. Wellcome medal and prize of $500 for an essay on sanitation; professor emeritus of public health at the University or Nebraska College of Medicine in Omaha; fellow of the American College of Surgeons and the American College of Physicians; died in Letterman General Hospital, San Francisco, May 15, aged 78, of coronary thrombosis.

**Achille Frank Baratta** ⊕ New York; Tulane University of Louisiana School of Medicine, New Orleans, 1921; affiliated with the Morrisania City Hospital; died May 12, aged 52.

**Leroy Becker** ⊕ Cobleskill, N. Y.; Albany Medical College, 1892; served as county coroner; died April 28, aged 80, of coronary occlusion.

**Salvator Benanti,** Brooklyn; Long Island College Hospital, Brooklyn, 1910; died May 20, aged 73.

**John Thomas Bradshaw** ⊕ Dade City, Fla.; St. Louis University School of Medicine, 1904; past president of the Paso, Hernando and Citrus Counties Medical Society; served during World War I; died in Zephyrhills May 22, aged 78, of coronary thrombosis.

**Harold Welch Brann,** Palo Alto, Calif.; St. Louis University School of Medicine, 1906; member of the American Psychiatric Association; affiliated with Veterans Administration hospitals in various cities; died April 9, aged 64.

**Frederick Watson Buckley** ⊕ Beatrice, Neb.; Northwestern University Medical School, Chicago, 1907; an Associate Fellow of the American Medical Association; for many years secretary of the Gage County Medical Society; a past vice president of the Nebraska State Medical Association; served during World War I; member of the American Association of Railroad Surgeons; died April 23, aged 68.

**Albert Ewing Childs,** Stanfield, Ore.; New York University Medical College, New York, 1896; formerly health officer of Bantam and Morris in Connecticut; died April 12, aged 76, of arteriosclerosis.

**Orra Fernando Covert,** Moundsville, W. Va.; Rush Medical College, Chicago, 1901; member of the American Medical Association and in 1909 a member of its House of Delegates; past president of the Marshall County Medical Society and the West Virginia Tuberculosis and Health Association; for many years on the staff of Reynolds Memorial Hospital in Glen Dale; died May 26, aged 84, of arteriosclerosis.

**Harriet Jean Bower Farnham,** Glendale, Calif.; University of Minnesota Medical School, Minneapolis, 1923; assistant clinical professor of pediatrics at the College of Medical Evangelists, Loma Linda and Los Angeles; affiliated with Los Angeles General Hospital, Glendale Sanitarium and Physicians and Surgeons Hospital, where she died April 4, aged 50, of carcinoma of the right breast.

**Albert Ferdinand Garton,** Philadelphia; Medico-Chirurgical College of Philadelphia, 1904; member of the American Medical Association; died April 15, aged 68.

**Harold Girard Giddings,** Boston; Harvard Medical School, Boston, 1907; member of the American Medical Association; past president of the Middlesex South District Medical Society; fellow of the American College of Surgeons; served during World War I; on the staffs of Whidden Memorial Hospital in Everett, Massachusetts General Hospital, Boston, and the Newton-Wellesley Hospital in Newton, where he died May 28, aged 69, of coronary occlusion.

**Frederic Wilhelm Hall,** Ponca City, Okla.; University of Kansas School of Medicine, Kansas City, 1936; member of the American Medical Association and the Kansas State Medical Society; specialist certified by the American Board of Internal Medicine; served during World War II; formerly on the staffs of William Newton Memorial Hospital and St. Mary's Hospital in Winfield, Kan.; died May 20, aged 37, of meningitis.

**Frederick Spencer Hallett** ⊕ Hackensack, N. J.; Long Island College Hospital, Brooklyn, 1893; for many years county jail physician; formerly member of the city board of health; served on the staff of the Hackensack Hospital; died May 18, aged 78, of arteriosclerotic heart disease.

**Silas F. Hallock** ⊕ New York; Western Reserve University Medical Department, Cleveland, 1885; served on the staff of the Manhattan Eye, Ear and Throat Hospital; died April 24, aged 87, of heart disease.

**Samuel Terrell Hardin,** Tuscaloosa, Ala.; University of Alabama School of Medicine, 1914; member of the American Medical Association; member of the city and county health departments; physician for city, county and federal prisoners; for many years county coroner; affiliated with the Druid City Hospital, where he was president of the staff; died May 16, aged 72, of coronary thrombosis.

**Albert Michael Healey,** New York; University and Bellevue Hospital Medical College, New York, 1907; died in St. Joseph's Hospital, Yonkers, June 11, aged 67, of cerebral hemorrhage.

**Evelyn Helman,** Santa Rosa, Calif.; American Medical Missionary College, Battle Creek, Mich., and Chicago, 1899; died April 25, aged 82, of carcinoma of the large intestine.

**Edward Robert Henning,** Bellefontaine, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1898; for many years county coroner; for twenty-five years surgeon for the New York Central Railroad; died May 31, aged 78, of uremia.

**Frances Houston,** Whitefish, Mont.; Rush Medical College, Chicago, 1916; formerly physician to women at the University of Washington in Seattle; died May 22, aged 62, of thrombosis.

**Albert Victor Keebler,** Lake Worth, Fla.; University of Louisville (Ky.) Medical Department, 1910; died in the Veterans Administration Hospital in Coral Gables April 21, aged 62.

**Raymond Miles Krepps,** Philadelphia; Tufts College Medical School, Boston, 1917; served as industrial physician for Sharp & Dohme, Inc.; died May 12, aged 58, of coronary occlusion and myocardial infarction.

**Owen William Krueger** ⊕ Kansas City, Mo.; Kansas City Medical College, 1890; fellow of the American College of Surgeons; affiliated with St. Margaret's Hospital in Kansas City, Kan.; died May 20, aged 84, of embolism, cardiorenal disease and auricular fibrillation.

**Alexander Leon Louria** ⊕ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1913; on the faculty of the Long Island College of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; a director of the American Jewish Physicians' Committee; affiliated with Jewish Hospital, where he died May 22, aged 59, of carcinoma of the lung with cerebral metastases.

**James Gregory McNeil,** Chicago; Loyola University School of Medicine, Chicago, 1921; member of the American Medical Association; on the staff of the South Chicago Community Hospital, died in Albuquerque, N. Mex., May 19, aged 56, of carcinoma of the throat.

**Moss Maxey,** Mount Vernon, Ill.; Missouri Medical College, St. Louis, 1897; member of the American Trudeau Society; died June 13, aged 75, of cardiorenal disease and arteriosclerosis.

**Harry Hampton Mayo,** Martin, Ky.; University of Louisville Medical Department, 1914; served during World War I; died in the Veterans Administration Hospital, Lexington, May 10, aged 61, of coronary occlusion.

**Lamar Cecil Oyster,** Clarksburg, W. Va.; Baltimore Medical College, 1901; died in the U. S. Marine Hospital, Staten Island, N. Y., May 17, aged 75, of generalized carcinomatosis.

**Roy Lee Page,** Tyler, Texas; University of Louisville (Ky.) Medical Department, 1909; member of the American Medical Association; died May 7, aged 64, of coronary occlusion.

**Otto S. Pavlik** ⊕ Oak Park, Ill.; Northwestern University Medical School, Chicago, 1904; formerly assistant professor of gynecology at his alma mater; member of the Central Association of Obstetricians and Gynecologists; affiliated with Wesley Memorial Hospital in Chicago and West Suburban Hospital; died March 29, aged 74, of coronary thrombosis.

**Walter Charles Popp** ⊕ Rochester, Minn.; University of Pittsburgh School of Medicine, 1929; assistant professor of radiology at the University of Minnesota Graduate School; specialist certified by the American Board of Radiology; member of the Radiological Society of North America; affiliated with the Mayo Clinic; died June 4, aged 48, of myocardial infarction and coronary sclerosis.

**William Landacre Pritchard** ⊕ Hilliards, Ohio; Ohio State University College of Medicine, Columbus, 1933; for many years president of the village school board; on the staff of the Mount Carmel Hospital, Columbus, where he died May 21, aged 43, of a ruptured sigmoid colon.

**William Rennie** ⊕ Buffalo; born in Pittsburgh on Dec. 1, 1893; University of Buffalo School of Medicine, 1920; served overseas during World War II with the 21st Field Hospital, rising from rank of captain to major; won the Bronze Star for "meritorious service" as head of a military hospital at Chungking, China, as well as a citation from the Republic of China; service terminated in March 1946; city diagnostician for Buffalo and county diagnostician for Erie County; died May 16, aged 55, of hypertensive heart disease.

**Frank D. Rowell,** Gilbert, Ariz.; University Medical College of Kansas City, Mo., 1897; died in the South Side District Hospital, Mesa, April 20, aged 79, of chronic nephritis and arteriosclerosis.

**Alfred Stephan Sigmann,** Bellevue, Pa.; Medizinische Fakultät der Universität, Wien, Austria, 1897; member of the American Medical Association; served on the staff of St. John's Hospital in Pittsburgh; died May 7, aged 81, of lymphosarcomatosis.

**Silas Sinclair Snider** ⊕ Chicago; Rush Medical College, Chicago, 1934; specialist certified by the American Board of Pediatrics; for many years pathologist for the county coroner's office; on the staff of St. Luke's Hospital; killed June 15, aged 41, when the monoplane in which he was flying crashed.

**William Jenness Sparhawk,** Cape Girardeau, Mo.; Barnes Medical College, St. Louis, 1903; member of the American Medical Association; affiliated with St. Francis and Southeast Missouri hospitals; died April 25, aged 69, of coronary disease.

**Charles Francis Spencer,** Ossining, N. Y.; University of the City of New York Medical Department, New York, 1882; formerly chief inspector of contagious diseases, health department of the city of New York; died May 23, aged 92, of heart disease.

**Joseph Marion Stallcup,** Cleburne, Texas (licensed in Texas, under the Act of 1907); past president of the Johnson County Medical Society; city health officer; died May 13, aged 75, of coronary occlusion.

**Ernest Richard Stoehr,** San Francisco; Rush Medical College, Chicago, 1932; died in May, aged 43, as the result of injuries received in an automobile accident.

**George W. C. Studley,** South Portland, Me.; Medical School of Maine, Portland, 1904; at one time health commissioner; died in the Veterans Administration Hospital, Togus, April 19, aged 74.

**Ernest Albert Taylor,** West Burke, Vt.; University of Vermont College of Medicine, Burlington, 1904; died in the Brightlook Hospital, St. Johnsbury, April 14, aged 77.

**Edwin G. Thompson,** Providence, R. I.; Medico-Chirurgical College of Philadelphia, 1893; also a graduate in dentistry; member of the American Medical Association; served as physician for the Prudential Life Insurance and Metropolitan Life Insurance companies; on the staff of the Roger Williams General Hospital; died May 11, aged 84, of carcinoma of the rectum.

**Thomas Graham Torpy,** Minocqua, Wis.; Rush Medical College, Chicago, 1895; member of the American Medical Association; died in Sacred Heart Hospital, Tomahawk, May 31, aged 80, of cardiac insufficiency and severe secondary anemia.

**Charles Frederick Vasey,** Cleveland Heights, Ohio; Jefferson Medical College of Philadelphia, 1901; died in Lakeside Hospital, Cleveland, May 16, aged 72, of adenocarcinoma of the colon.

**Miles Abernathy Watkins,** Birmingham, Ala.; Medical Department of Tulane University of Louisiana, New Orleans, 1909; member of the American Medical Association; served during World War I; on the staffs of St. Vincent's, Jefferson and Highland Baptist hospitals; died May 22, aged 63, of coronary thrombosis.

**Israel Irving Weiner,** Brooklyn; New York Homeopathic Medical College and Flower Hospital, New York, 1923; member of the American Medical Association; affiliated with the Veterans Administration; died in Jewish Hospital April 10, aged 50, of diaphragmatic hernia.

**John Frank West,** Belvidere, Ill.; Chicago College of Medicine and Surgery, 1910; member of the American Medical Association; served during World Wars I and II; rating specialist for the medical administration regional office at Louisville, Ky.; died April 28, aged 68, of bronchiectasis, myocarditis and arteriosclerosis.

**Frank S. Wiley,** Fond du Lac, Wis.; Rush Medical College, Chicago, 1883; member of the American Medical Association; fellow of the American College of Surgeons; served on the staff St. Agnes Hospital; died April 12, aged 87.

# Foreign Letters

## OSLO

*(From Our Regular Correspondent)*

July 6, 1949.

### Tuberculosis in the Fighting Services

Recruits who enter the Norwegian Navy, Army and Air Force undergo a thorough medical examination, which includes tuberculin testing and, in many cases, a roentgenographic examination. Men with tuberculosis are rejected for service. One therefore might expect the fighting services to be free of tuberculosis, but, unfortunately, they are not. Dr. Martin Seip has concluded from a study of the 1948 class of recruits and of the budget year 1947-1948 that tuberculosis is now the greatest danger to life and health for the three services in peace time. In this budget year 42 per cent of those in the fighting services with a disability requiring financial aid had tuberculosis. The incidence of tuberculosis was three times greater in the Navy than in the Army or Air Force, probably because of the relatively close contacts among the men when at sea. Dr. Seip believes that if the new law for compulsory BCG vaccination could be enforced, many men found to be tuberculin-negative on entering the fighting services could be protected effectively from tuberculosis.

### Housing of Country Doctors

Rural areas in Norway are served by physicians who are appointed as medical officers of health and who also act as private practitioners, thereby supplementing their fixed pay. In view of their official status, these doctors should be provided with proper housing by their employers, the central and local authorities, but often, when an appointment is to be made in some outlying district, the applicant visits the locality and finds that the local authorities have done little or nothing to house him properly. He asks leave of the central authority to remain at his original job. When, as often happens, such leave is given, the vacancy in the district again must be advertised. The Norwegian Medical Association has urged the central authority to require local authorities to build new houses or repair old houses for the incoming doctor.

### Compulsory Drafting of Civilian Doctors

The provisional law of April 18, 1947, empowering the central authority to impose certain medical tasks on civilian doctors, was originally intended to be in force to May 1, 1948. Then it was extended to May 1, 1949. Now the government wants to enforce it until May 1, 1952, in spite of protests from the Norwegian Medical Association, which has expressed fears that the exercise of such powers may cause the authorities to delay considering various reforms in the public health services advocated by the Norwegian Medical Association. If the director of health is to be permitted to order civilian doctors to districts where epidemics or other medical catastrophes have occurred, the Norwegian Medical Association urges that better terms should be provided for these doctors, for example, higher pay, better housing and recognition of such medical service as a factor in future promotions.

### Studies Abroad by Norwegian Doctors

The dollar exchange is stopping study visits to the United States by young Norwegian doctors who wish to specialize and enlarge their medical horizons in a country which is more and more coming to be regarded as the Mecca of medicine. Dollar credits are controlled by the authorities in Oslo and those desiring dollars for a stay in the United States must give cogent reasons for their travel.

## ISRAEL

*(From Our Regular Correspondent)*

JERUSALEM, June 21, 1949.

### Microbiologists' Meeting in Jerusalem

The eighth meeting of the Israel Microbiological Society took place at the Terra Sancta College, Jerusalem, March 1949.

The meeting was opened by Prof. L. Olitzki, Head of the Department of Hygiene and Bacteriology at the Hebrew University, who reviewed the activities of the Israel microbiologists in recent years and the difficulties they had to overcome in challenging the mandatory government's policy of chaos. All laboratory services could be continued almost uninterruptedly, and, in addition to the existing laboratories, new ones were opened, particularly in connection with urgent matters, such as blood banks, Dr. Olitzki emphasized the future need of close contact between the laboratories and the government authorities in order to solve the most important problems of public health and to keep the standard of work as high as possible.

Friendly relations with the International Association of Microbiologists had been maintained. Twelve members from Israel were present at the International Congress in Copenhagen; five papers were read by them. One member, L. Olitzki, was appointed vice president of the Section of General Microbiology, and another member, M. Aschner, was appointed to the International Committee for Microbiological Nomenclature. An invitation to the next International Congress to be held in 1950 in Rio de Janeiro was received.

During the first session Dr. David Nachtigal demonstrated a method of cultivating smallpox virus in chick embryos. This method enables a quick differential diagnosis between typical cases of smallpox and varicella; the former produce typical microscopically visible vesicles on the chorioallantoic membranes, whereas the latter do not produce any pathologic changes.

Dr. B. Volkani (Weizmann Institute, Rehovoth) reported results observed in the metabolism of bacterial species with radioactive tracer substances.

The first part of the last session was devoted to serologic and immunologic problems. The diagnosis of syphilis, which was hitherto of minor importance, has now gained an important place among the laboratory methods. Serologic mass examinations of about 10,000 persons were carried out among immigrants before their departure for Israel and among Army recruits. The results obtained with quick methods adapted for mass examinations were reported by Drs. Rappaport and Eichhorn (Municipal Hospital, Tel-Aviv) and Dr. Gregman and Miss P. Gruenbaum (Kupat Cholim Laboratory, Tel-Aviv). Miss Skareton and Dr. Rappaport reported a quick method for diagnosis of infectious mononucleosis.

The last part of the session was devoted to the antibiotic substances. Dr. Rozansky and Dr. Brzezinski (Bacteriological Laboratory and Maternity Department, Hadassah University Hospital) reported on the appearance of considerable quantities of penicillin in milk of women in the course of treatment with this antibiotic. Dr. Raubitschek (Department of Dermatology, Hadassah University Hospital) demonstrated the antibiotic action of an aerobic spore-forming bacillus on pathogenic fungi. Miss N. Stybel reported the results of a survey of soil organisms carried out in the Hebrew University's Department of Botany under the guidance of Dr. T. Rayss in an extended area between Jerusalem and the Dead Sea. Antagonism was observed between different species of fungi.

### The First Diagnosed Outbreak of Q Fever in Israel

For the first time Q fever was diagnosed in this country. The diagnosis was based on the results of complement fixation tests with Coxiella burneti (Italian strain) as antigen, performed by Elisabeth and A. Klopstock (Tel-Aviv).

From 234 serum specimens so far examined 75 gave positive reactions in significant titers (1:32 to 1:2,048).

Nearly all cases occurred in Haifa. They were not confined to a particular section of the population or to a particular region of the town. About 80 per cent of the patients were male. Family infections were not seen. As the outbreak started in winter, ticks and other insects can be excluded as vectors. Direct contact with animals, especially cows and goats, is denied in the vast majority of cases. A possible source of the infection seems to be dust from packing material (straw) handled in the Haifa port. Most of the patients were not occupied or working in the port but went, as does nearly everybody in Haifa more or less regularly, near the port area.

As the outbreak has no explosive character but is protracted over several months, a persistent but as yet unknown source of the infection must be conceived.

The serum specimens which showed a negative reaction to the Q fever complement fixation test were mostly from cases of atypical pneumonia, not otherwise distinguishable from Q fever. A certain number of these showed cold agglutinins in significant titers, but others gave neither reaction.

### Hebrew University Hadassah Medical School

The Hebrew University Hadassah Medical School was opened on May 17 in Jerusalem. The first 50 medical students are beginning their studies in the new established classes, temporarily housed in the former Government Hospital in Jerusalem. On the occasion of the opening of Israel's first medical school, Prof. S. Adler, head of the Department of Parasitology of the Hebrew University, reviewed the unique situation. In the summer of 1947, Prof. W. Perlzweig came to Jerusalem to guide the University and the Hadassah. His visit was invaluable, and a deep debt of gratitude is owed him. If nothing untoward had happened, premedical education would or should have commenced in October 1948. All those plans were stopped by the disturbances and subsequently the open warfare against Israel. The Israeli Government called on all young fit Israelis studying abroad to return and take part in the defense. The response was immediate. Young men who had completed a part of their course left their studies and came over to fight. In many cases they could not, for various reasons, return to their medical schools, and they were faced with the grim prospect of having to abandon their chosen careers.

The Israeli army authorities, ever mindful of the interests of their volunteers, made a careful analysis of the whole situation and, together with the University and Hadassah, gave the soldier-students an opportunity to resume their studies.

The medical school is now an established fact.

## BOLIVIA

*(From Our Regular Correspondent)*

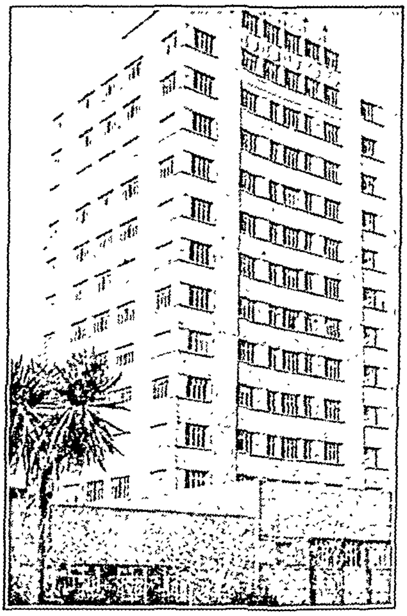
LA PAZ, June 29, 1949.

### Medical Meetings in Bolivia

The first meeting of Bolivian pediatricians was held at La Paz in May 1948, with some 30 physicians assisting. The most interesting paper was one on the study of weights and figures of infants. Widely discussed at this meeting also was the statement on infant mortality in this country, published by THE JOURNAL (136:417 [Feb. 7] 1948).

From October 19 to 23 the Fifth Inter-American Congress of Surgeons was held at La Paz; it constituted one of the brightest events of the simultaneous festivities in occasion of the four hundredth anniversary of the foundation of La Paz. The congress was sponsored by the president of the Bolivian Republic, Dr. Enrique Hertzog G., a well known physician in private life himself. Besides numerous Bolivian physicians, attending also were surgeons from the United States (Dr. E. P. Palmer, Phoenix, Ariz., and Dr. Hu C. Myers, Phillipi, W. Va.) who came representing the American College of Surgeons; numerous delegations from Argentina and Chile, as well as surgeons from Perú, Uruguay and several other South American republics. The three main subjects discussed were "Volvulus of the Sigmoid," "Fractures of the Distal Portion of the Radius" and "Hemorrhagic Infarction of the Bowel." Surgeons from most of the attending countries presented their papers on the subjects, and so did the American delegation. Dr. Palmer's paper on "Volvulus of the Sigmoid" was declared the best paper presented during the congress, a most important distinction. Dr. Palmer read also an excellent paper on "Fractures of the Distal Portion of the Radius," and Dr. Myers read one on "Hemorrhagic Infarction of the Bowel." There arose some question as to the exact meaning of the term "infarction," as several South American surgeons used that term for a clinical picture more closely resembling the over-all picture of spastic ileus. This question of the use of different meanings diminished somewhat the value of some papers on that subject.

Besides the main subjects, there were some twenty papers on free subjects, presented by Bolivian and other Latin American surgeons. There were also several meetings with the performance of surgical operations by the surgeons of the attending countries.



Building of the University of San Andres at La Paz. The Medical School is still located in a separate building.

The whole meeting was held at the new and modern building of the University of San Andres, actually the highest building of the country. There was also a scientific exhibit, which was much visited, not only by the delegates to the Congress but also by the local population.

The program also included formal invitations by the President of the Republic, by the Minister of Health and by the Mayor of the City of La Paz, the world's highest capital.

At the final session of the Congress, the subject of the next congress, to be held at Chicago in 1949, was brought up, and Dr. Palmer, the delegate of the American College of Surgeons, extended a cordial invitation to that meeting. Some Latin American delegates mentioned the question of the necessary funds and suggested that it would be extremely difficult for some of them to raise the necessary money to attend the next congress; Dr. Palmer offered to make a gift of the necessary amount, estimated as $30,000, from his own money, for delegates unable to attend the congress because of lack of funds. This offer was enthusiastically applauded, not only by the attending surgeons but also by the local press. On an invitation made by the Argentinian delegates, Dr. Palmer visited Buenos Aires after termination of the meetings.

# Correspondence

## HAZARD OF LABORATORY INFECTION WITH LEPROSY

*To the Editor:*—In the Queries and Minor Notes section, THE JOURNAL, March 26, page 893, an inquirer who had pricked himself with a pin used in testing a leprosy patient for skin anesthesia, and who after an interval of twenty minutes had cauterized the site with sulfuric acid, asked whether or not he should take "a course" of one of the sulfones or some other drug as a prophylactic. If the lesion or lesions which had been tested with that pin were bacteriologically negative—by ordinary, standard methods of examination — the inquirer has no real cause for worry. If that examination was being made for the purpose of diagnosis, it follows in all probability that the simpler and more conclusive bacteriologic test had been made and had given negative results.

From the practical point of view, there would not be justification for serious worry on behalf of a healthy adult even if the lesions had been bacillus-positive lepromas instead of macular leprides. True, the evidence is almost beyond dispute that accidental infection can occur, and by just such means, but known instances are rare. Your referee mentioned the case reported by Marchoux, of Paris (*Internat. J. Leprosy* 2:1-6, 1934), in which an assistant at a biopsy was stabbed by a blunt needle and at once applied iodine vigorously, but ten years later had a leprous lesion at the place. Shortly before that de Langen, of Batavia, had reported at the Far Eastern Association of Tropical Medicine in Bangkok (1930) a case of apparent infection by a contaminated hypodermic needle (*Internat. J. Leprosy* 1:220-225, 1933). (The case of Lagoudaky's infection, claimed by him in at least three publications from 1936 to 1938 to have resulted from self inoculations, is not unequivocal, and anyhow it is of a very different category.) The most recent and interesting report of apparently accidental infection by the intradermal route is that of Porrit and Olsen (*Am. J. Path.* 23:805-811, 1947) of two American marines who were tattooed at the same time and in the same way by the same operator and who both had leprous lesions in the tattooed areas somewhat under three years later.

Such occurrences may seem to your inquirer as reason for real concern for his own welfare, but actually they can be regarded only as highly exceptional indications that infection of adult man by such means is possible. In their daily activities physicians, nurses and others who work with leprosy patients with infectious forms of the disease unavoidably have many intracutaneous and other introductions of bacilli without harm resulting, a point mentioned by your referee. More than once through the years I have seen colleagues strip off their gloves to treat with iodine accidental injuries incurred during operations, and more than once I myself have had occasion to do that at the autopsy table, but none of the persons concerned has ever shown any evidence of infection. Adult resistance being what it is, extremely few of the personnel of leprosy institutions have ever acquired the disease—and those who have done so have thereby laid themselves open to suspicion of gross and habitual carelessness.

As for prophylactic treatment of a person pricked with an infected needle, I can see no indication whatever that any known drug would be of the least benefit in that way. Years ago there was some discussion whether or not prophylactic treatment (with chaulmoogra derivatives) should be given to contact children, but of the few workers who tried that measure there were those who concluded that the disturbance of such treatment was more likely to be harmful than beneficial. The sulfones, it may be argued, have changed the situation. They certainly have proved to be exceptionally valuable in arresting the progression of the disease in active cases, and in many cases of lepromatous leprosy they cause more or less marked retrogression of conspicuous, bacillus-rich lesions; but that effect often stops far short of actual resolution of such lesions, and apparently the bacteriologically negative maculoanesthetic and tuberculoid lesions do not respond as well. Furthermore, as the lepromas retrogress their bacterial concentration does not decrease proportionately with the cellular elements, and bacilli may persist in the sites of lesions which have cleared up clinically. These facts would not encourage one to expect that the systemic administration of any known drug in any feasible dosage would eliminate, by bactericidal action, a few recently introduced bacilli; and to take any drug in sufficiently large dosage to maintain over periods of months or years a blood level that might be bacteriostatic, to meet so slight a chance of trouble as exists in the case under discussion, would be utterly irrational.

Finally, your referee reechoes the belief that all will be made known after the leprosy bacillus has been grown in culture. When that is accomplished, how will it be proved? Many men have been honestly convinced that they have grown that germ, but none has been able to convince the world for lack of a laboratory animal in which a disease resembling human leprosy can be produced, for the proof which Koch was able to adduce with respect to the nature of his tubercle bacillus culture. With tuberculosis it is not the in vitro experiment with the culture which affords the final justification for applying a new drug to man, but the in vivo animal treatment experiment. If we could find a laboratory animal susceptible to infection by human leprosy, or some method of making any of the ordinary laboratory animals susceptible to that infection, such crucial treatment experiments could be carried out at once, for we already have available—and always have had—veritable mass cultures of the germ in the nodules of active human lepromatous leprosy.

H. W. WADE, M.D.
Culion Leper Colony, Philippines.

## ARTIFICIAL INSEMINATION

*To the Editor:*—While the indications for and against artificial insemination by the use of donor semen have been well discussed in many publications, few publications have stressed the necessity of careful donor selection. Recently it has come to my attention that young interns and medical students are being used for this purpose. That does not seem to be the proper procedure.

A donor should be selected who carries as many as possible of the physical attributes of the husband of the recipient; but also it seems advisable that the donor be an adult male who has demonstrated his ability, first of all, to produce normal children, and secondly, has the ability to maintain his position in society as a father and a husband; thirdly, one who has the ability to accept education, and, fourthly, one who is able to acclimate himself to his fellow men. These few requisites will then only be the beginning of a genetically acceptable process which should be the aim of any gynecologist who is using artificial insemination as part of his therapeutic regimen for infertility.

LOWELL F. BUSHNELL, M.D., Hollywood, Calif.

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various Centers. Sept. 12-14. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc. *Oral.* Denver, Oct. 16-20. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

American Board of Dermatology and Syphilology, Inc.: *Written.* Various Centers, Sept. 15. *Oral.* Cincinnati, Sept. 15. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Oct. 17. Asst. Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Part I.* Various Centers. Feb. 3. Final date for filing application is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: St. Louis, Oct. 15-19; Boston, December. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II*, New York City, Feb. 9-10. Final date for filing application for Part II is Aug. 15. Address: Sec.-Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: Chicago, Oct. 7-8. Final date for filing application is Sept. 1. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: *Oral.* Cleveland, Sept. 16-18; New York City, Oct. 21-23; Chicago, Dec. 9-11. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Preventive Medicine and Public Health: *Parts I and II.* New York, Oct. 22-24. Final date for filing application is July 22. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Psychiatry and Neurology, Inc. *Special Examination.* Chicago, Oct. 24-25. December, New York City. Final date for filing applications is Sept. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Cincinnati, Sept. 28-Oct. 2. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, October 26. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written.* December. *Oral and Clinical.* Chicago, Feb. 11-15. Final date for receipt of case histories is Sept. 1, 1949. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18.

### BOARDS OF MEDICAL EXAMINERS

Alaska: * Juneau, Sept. 6. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Arkansas: * *Examination.* Little Rock, Nov. 3-4. Sec., Dr. Joe Verser, Harrisburg. *Eclectic.* Little Rock, Nov. 3. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

District of Columbia: * *Examination.* Washington, Nov. 14-15. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Georgia: *Examination.* Atlanta, Oct. 11-12. *Reciprocity.* Atlanta, Oct. 13. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Illinois: Chicago, Oct. 4-6. Supt. of Registration, Mr. Fred W. Ruegg, Capitol Bldg., Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Sept. 5, Oct. 3, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Minnesota: * Oct. 18-19. Sec., Dr. Julian F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

Montana: Helena, Oct. 3-5. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, Sept. 8-9. Sec., Dr. J. S. Wheeler, 107 State House, Concord.

New Jersey: Oct. 18-21. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico: * Santa Fe. Oct. 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

New York: *Examination.* New York, Albany, Syracuse and Buffalo, Oct. 4-7. Sec., Dr. Jacob L. Lochner Jr., 23 S. Pearl St., Albany 7.

Ohio: *Examination.* Columbus, December. *Endorsement.* Aug. 2 and Oct. 2. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Puerto Rico: San Juan, Sept. 6-10. Sec., Dr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

Tennessee: *Examination.* Memphis, Sept. 28-29. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis 3.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Wisconsin: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

Wyoming: Cheyenne, Oct. 3. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: Juneau, Aug. 28. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, Sept. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Arkansas: *Examination.* Little Rock, Oct. 4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

Colorado: *Examination.* Denver, Sept. 14-15. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

District of Columbia: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Michigan: *Examination.* Detroit and Ann Arbor, Oct. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing 15.

Minnesota: *Examination.* Minneapolis, Oct. 4-5. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

Nebraska: *Examination.* Omaha, Oct. 4-5. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln 9.

New Mexico: *Examination.* Santa Fe, Aug. 7. Sec., Miss Marguerite Kilkenny, 110 W. Houghton St., Santa Fe.

Oregon: Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

Rhode Island: *Examination.* Providence, Aug. 10. Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Wisconsin: Milwaukee, Sept. 24 and Dec 3. Sec., Prof. W. H. Barber, Ripon College, Ripon.

# Council on Medical Education and Hospitals

## CORRECTIONS

**Internships and Residencies.** The following services were inadvertently omitted from or incorrectly listed in the Internship and Residency Number of The Journal (May 14, 1949, pp. 161-225). These services are approved by the Council on Medical Education and Hospitals as indicated.

### APPROVED INTERNSHIPS

| | |
|---|---|
| Michael Reese Hospital+[1] x24, x26 | Chicago, Ill. |
| St. Joseph Hospital+ | Fort Wayne, Ind. |

### RESIDENCIES

| *Name of Hospital* | *Location* | Chief of Service | Length of Approved Program (Yrs.) |
|---|---|---|---|
| Allergy: | | | |
| †University Hospital* | New York City | W. C. Spain | .. |
| Dermatology and Syphilology: | | | |
| White Memorial Hospital* | Los Angeles | C. E. Counter | 1 |
| Cook County Hospital*[1] | Chicago | T. Cornbleet | 3 |
| Veterans Admin. Hospital[21] | Fort Howard, Md. | M. Sullivan | 3 |
| †Barnes Hospital* | St. Louis | R. Weiss | 3 |
| General Residency: | | | |
| St. Francis Hospital | Miami Beach, Fla. | | .. |
| Pottstown Hospital | Pottstown, Pa. | | .. |
| Internal Medicine: | | | |
| *U. S. Marine Hospital** | *San Francisco* | R. K. Maddock | .. |
| U. S. Marine Hospital*[1] | Baltimore | L. L. Terry | .. |
| U. S. Marine Hospital*[1] | Stapleton, N. Y. | R. Smith | .. |
| †U. S. Marine Hospital*[1] | Seattle, Wash. | G. A. Abbott | .. |
| Orthopedic Surgery: | | | |
| Veterans Admin. Hospital | Louisville, Ky. | J. Lyford III | 2 |
| Pediatrics: | | | |
| Fitzsimons General Hosp.* | Denver, Colo. | | 2 |
| †Brooke General Hospital* | San Antonio, Texas | L. J. Geppart | 2 |
| Psychiatry: | | | |
| †Veterans Admin. Hospital[1] | Louisville, Ky. | D. F. Moore | 3 |
| Philadelphia General Hosp.*[1] | Philadelphia | | 2 |

| | | | |
|---|---|---|---|
| Pulmonary Diseases: | | | |
| †Tulare-Kings Counties Joint Tuberculosis Hospital[1] .... | Springville, Calif... | W. A. Winn..... | .. |
| Radiology: | | | |
| University Hospital*[1] ...... | Little Rock, Ark.... | I. Meschan...... | 3 |
| Grady Memorial Hospital*[1] | Atlanta, Ga......... | H. S. Weens..... | 3 |
| †Cambridge City Hospital*.. | Cambridge, Mass... | F. W. O'Brian.. | 1 |
| Surgery: | | | |
| †Gaston Hospital ........... | Dallas, Texas....... | .................. | .. |
| Thoracic Surgery: | | | |
| †Baylor University Hospital* | Dallas, Texas....... | .................. | .. |

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## Numerical and Other References

+ The plus sign indicates additional approval for residencies in specialties as shown in the Council's list of Approved Residencies and Fellowships for Veterans and Civilian Physicians.

* Indicates hospitals approved for training interns.

† Indicates temporary approval.

[1] Residencies open to women.

[21] In affiliation with Johns Hopkins Hospital, Baltimore, Md.

### MEDICAL SCHOOL AFFILIATIONS

Hospitals have been identified with symbol x when a medical school has indicated that the hospital is used to a limited extent in the school's teaching program.

24. Northwestern University Medical School, Chicago.
26. University of Illinois College of Medicine, Chicago.

# Bureau of Medical Economic Research

## MEDICAL ECONOMIC REVIEWS AND ABSTRACTS

### Prepared by the Staff of the Bureau of Medical Economic Research

*(Continued from page 1050)*

**Medical Payments Coverage.** By Ambrose Ryder. Casualty & Surety J. 9: 13-19 (May) 1948.

The introduction of third party medical payments coverage into third party legal liability policies has secured much good will for the casualty insurance companies, particularly in regard to automobile liability. Previously, the insured was protected against claims brought by injured parties, but he was unable to collect in the case of injuries to his own person or that of his wife, child or guest. The case of a lawsuit by a guest was particularly difficult since the insured became torn between his loyalty toward his friend and his obligation under his policy to cooperate with the insurance company in defense of all claims. The solution to these difficulties lay in a policy that would automatically pay for injuries to all passengers in the automobile. Since there already was a precedent for coverage of this nature in the "first aid" clause of the automobile liability policy, the automobile medical payment coverage evolved as an extension of the first aid coverage.

When the coverage was first announced by the National Bureau of Casualty Underwriters in 1939, two forms were approved; the first required the execution of a release. Both forms excluded operators from the benefits of coverage. Before long the release requirement was dropped entirely. The medical payments coverage is, therefore, a separate and distinct coverage without any tie-in with the third party legal liability coverage. The injured guests can receive the full benefits of the automobile medical payments coverage and yet bring claim against the insured for additional sums for which the insured person is fully protected under the bodily injury coverage. Since the insured was paying for the protection and since he often rode in his car as a passenger, the medical payments coverage was extended to include him and all other operators of the car.

The next step was to extend the medical payments coverage to cars other than private passenger cars, though the biggest demand for coverage is still from the private car owners. With coverage broadening in every direction, the only important exclusion today is on injuries received by an employee in the course of his employment and injuries sustained by a person eligible for payments under any workmen's compensation law. In general, the companies have broadly interpreted the scope of medical payments insurance relating to "entering upon, riding in or alighting from" the automobile. On the whole, the companies feel that the medical payments coverage has not only served as an instrument of good public relations, but also as a builder of premium volume of favorable loss ratio.

The medical payments coverage is now being extended to the field of general liability insurance. In contrast to the automobile liability policy, which insures all the occupants of the car, the general liability policy excludes benefits to the insured or any tenant of the premises, except domestic employees. Since medical payments coverage has been a feature of general liability insurance policies only since May 1947, it is too early to pass judgment on either its efficacy or its popularity.

**Medical Services in New Zealand.** By Hugh MacLean and Dean E. McHenry. Milbank Mem. Fund Q. 26: 148-181 (April) 1948.

The system of health benefits written into the Social Security Act of 1938 in New Zealand represents the most "advanced" experimentation in the field of state medicine among the free nations of the world. Before the advent of the Labor Government in 1935, there was little prepaid medical care in New Zealand. Although there were the friendly societies and fraternal orders, and although insurance funds were utilized in the payments for workmen's compensation cases, most practitioners were engaged in individual practice, collecting their fees from their patients.

While the method of providing the major medical services bore general similarity to those in the other English-speaking countries, a number of developments in the auxiliary health services were rather unusual. Extensive public health facilities had been established. A system of free dental services had been instituted in the schools. A program of infant feeding and of training of mothers, nurses, etc., known as the "Plunket movement," had reduced the infant mortality rate of the dominion to one of the world's lowest. Finally, the high standards of the medical schools in New Zealand have been an important determinant of the quality of medical care.

The Labor Party had promised the nationalization of medical services in its party platform. When the party took office late in 1935, it was announced that the Minister of Health, Mr. Peter Fraser, was considering a national health scheme and that a committee of House of Representative labor members under the chairmanship of Dr. D. G. McMillan was helping to formulate it. At this time the medical profession was poorly prepared to meet the popular and political demands for a national health program. "Although the British Medical Association, New Zealand Branch, . . . did establish a national health insurance committee, brought Sir Henry Brackenbury out from England to consult, and carried on a lively discussion of issues in its *Medical Journal,* the profession neither proposed a realistic, comprehensive scheme itself nor did it manage to maintain close contact with the Government while the provisions of the Social Security Act were being formulated."

The British Medical Association thought that the population should be divided into four groups with health services provided on the basis of their capacity to pay for services. The McMillan committee adamantly supported the principle of universal coverage and vigorously attacked the British Medical Association for classifying the people into income classes. The committee began its investigation by sending a questionnaire to ten groups that would be most affected by any health legislation. The committee does not present a clear statement of the replies to its questionnaire but incorporates in the committee report some of its own ideas. The report then recommends that a universal national health service be established. British Medical Association officials claim that they were not shown the report and that it was not published as a public document even after the Social Security Act was on the statute books.

On the motion of the Prime Minister, the National Health and Superannuation Committee was established. The report filed by this committee is, in effect, an approval of the security proposals Prime Minister Savage submitted to it. Half of the report is devoted to a rebuttal of the British Medical Association arguments. The other half is a recommendation to the House and to the Government of favorable consideration of the proposed legislation. Although the British Medical Association representatives had been assured that they would have the opportunity to examine the proposed bill before it went to the Cabinet and the House, the bill was sent through without being submitted to them.

In contrast to the schemes in operation in other countries which provide limited coverage only, the New Zealand bill anticipated universal coverage of the total resident population. The New Zealand plan was also unusual in that it was to be noncontributory, benefits being paid to all as a matter of right, regardless of whether or not taxes had been paid for the purpose. Funds to finance the entire social security program were to be raised by a flat tax on all income (originally 5 per cent, now 7½ per cent) and by an annual levy on all adults (1 pound for men and 5 shillings for women), which has since been repealed. Additional money to finance the program would be obtained from the Consolidated Fund of the state. New ground was broken in the comprehensiveness of the medical benefits to be provided. No other country, except perhaps Russia, ever afforded such complete protection.

The launching of the health program was a slow process. In April 1939, the first benefit, free treatment in state mental hospitals, went into effect. On May 15, 1939, the second class of benefits was made available. For an annual cost to the state of between 500,000 and 600,000 pounds, or around 6 shillings per capita, the financial burden of childbirth has been removed from the family and placed on the community. This class of benefits is easiest to administer, since an absolute check over the practitioner, patient and hospital exists in the form of birth records.

Hospital benefits for other than maternity cases became effective for inpatient treatment on July 1, 1939. (Outpatient treatment was included from March 1, 1947.) Charges on the social security fund for hospital services are larger than for any other class of health benefits. The total yearly cost to the fund has been over 2,000,000 pounds since 1943-1944. To this figure, 1,000,000 pounds which hospitals receive from local land taxes must be added to arrive at the total figure for hospital services. "Far from relieving Hospital Boards of financial burdens, it has added greatly to their responsibilities and their costs." This arises from the fact that the scheduled payment per patient per day does not pay the full cost of keeping a patient in a hospital, and the extra amount must be raised by the land tax. The hospital benefit has been a factor in filling hospitals to capacity and has necessitated the expansion of hospital facilities. "The charge is sometimes made that the availability of hospital benefits has caused a large number of chronic and minor cases to fill hospital beds, leaving a minimum of space available for cases in great need of hospitalization."

On March 1, 1941, physician benefits under the capitation scheme were introduced. The physician was to be remunerated from the fund at a fixed rate for every man, woman and child on his panel. There was to be free choice of physician by patient and of patient by physician. The British Medical Association was strongly opposed to the capitation system. The organization admitted that the costs of operation could be computed more accurately by the government and that administration would be comparatively simple. It contended, however, that an unfair burden of risk was placed on the practitioner, who must offer his services for a set amount per year regardless of the amount of illness encountered. Pressure from the profession has led to three major concessions: the fee for service plan, the right of the physician to charge the patient more than the fixed fee, and state refund to the patients rather than direct collection by the physician from the state fund. Although the Labor Party is still convinced that the capitation scheme is most satisfactory, its use has declined fairly steadily. Medical service for persons living in remote areas has been provided mainly through salaried officers. The salaries are necessarily high enough to attract young physicians into these areas.

In May 1941 a system of pharmaceutic benefits was inaugurated. The cost of these benefits has become increasingly higher. In 1945-1946 they cost almost as much as medical practitioner services. This tremendous cost is partly due to overprescribing by physicians. Better administrative procedures would eliminate abuses and reduce costs.

Roentgenologic diagnostic services were instituted in August 1941, massage services in September 1942 and district nursing services in September 1944.

The School Medical Service, which was established thirty-five years ago, has been greatly expanded since the Labor Government came to power in 1945. The National Dental Service, which is noted for its use of dental nurses to perform ordinary clinical operations, the comprehensiveness of its service coverage and its support by the dental profession, has also been greatly expanded.

Although the National Health Insurance Investigation Committee appointed in July 1936 held hearings throughout the country and collected the opinions of many interested persons, it cannot be regarded as an impartial and representative board of inquiry. The traditional type of Royal Commission, in this case composed of top representatives of the medical profession and outstanding experts from various fields, would have commanded much more respect than a departmental committee. The organized medical profession and the government have not been cooperating to the extent necessary for a proper functioning of the scheme. As the author of this article points out, "The Government must recognize that professional men and women are entitled to an important voice in determining the conditions under which they shall work. The profession must understand that the feature of universal coverage of health services is highly popular with the people, and that the doctors will lose in the long run if they adopt uncooperative attitudes.

"Finally, we think that the whole field of health benefits should be subjected to searching enquiry by a Royal Commission, headed by a chairman, recognized by the public as competent and impartial, and on which the medical profession should have representation. A thorough investigation is needed before further expansion of services, and might do much to bring the Government and the British Medical Association close enough to provide the basis for real cooperation . . ."

**Where Are We Going? Medicine in a Planned Economy.** By Frangcon Roberts. Brit. M. J. 1:485 (March 13) 1948.

This article, conditioned by current economic and medical problems in Britain, advances the often neglected fact that economic conditions of a country should limit the development of medical services. When invoked alone the spirit of humanitarianism, which is usually involved with emotionalism, would extend infinite medical care.

Citing the relative increase in the number of staff members in comparison to hospital beds, Dr. Roberts calls attention to the fact that the growth in medical care is not so much related to the increasing population or an increased incidence of disease, as it is to the rapidly increasing amount of medical care being given the patient in the normal course of treatment. For instance, in 1897 there was roughly 1 staff member to 10 hospital beds; now there is 1 to every 4½ beds. The use of laboratories and pathologic examinations in England is thirty-three times as great as in 1927. Despite this, the number of patients waiting for hospitalization is four times as great as it was ten years ago.

The author cites these facts among others as evidence of an "acceleration towards infinity" in the growth of medical care. What factors might occur that would limit this upward expansion? Dr. Roberts feels that stabilization of the population would invoke little change since, as already pointed out, most of the expansion in facilities for medical care has come from the increased amount of medical care given each patient in the normal course of treatment. Thirty-five years ago a small single x-ray installation was sufficient and "up-to-date." This is far from the extensive radiology equipment now available and "standard" in most hospitals today. Yet the nature of medical science implies that there are unobtainable goals.

Improvement in social conditions, the author believes, will aid little in retarding this "acceleration." There is little correlation between social conditions and the major diseases that are filling the hospitals today. Moreover, there is the extreme danger of the doctor's becoming involved in extensive litigation as the patients become more acquainted with various medical technics and demand their use for treatment, especially when these are provided "without cost" to the patient. This pressure will naturally contribute to the overuse of medical services. Furthermore, as the standard of living increases, nonessentials will creep into medical care and patients will come to judge efficiency by the number of "extras" offered. Dr. Roberts cites the "dainty teas" so favored by women patients at cottage hospitals "to which they should not have been sent" in the first place.

The advancement of science in reducing the need and expansion of resources for medical care is peculiarly susceptible to diminishing returns. All that medical care can do is to prolong life for a few years. Science has had its most obvious exploits in the cure of acute rather than chronic ailments. "Progress slows up as we come to deal with the weaknesses of the flesh." This is especially true because humanitarianism prevents scientific breeding and wholesale slaughter of the unfit—scientific approaches used by the agricultural and biologic scientist.

If none of the aforementioned factors is likely to restrict the "demand" for medical service, is it enough that humanitarianism should alone be the controlling factor in the allocation of medical care? Human life is not beyond price at all times. Obviously we could nearly eliminate deaths from automobile accidents by establishing a 10 mile per hour speed law. This we could do at the expense of causing radical changes in our commerce and curtailing our pleasure.

"While I fully appreciate that in practice the humanitarian and economic motive cannot be separated, I am convinced that we cannot solve the problems which confront us unless we realize that national prosperity determines the humanitarian component and is largely determined by the economic component. The importance of the economic component is brought home to us only when manpower is short. Always implicit in the work of the military medical services, it is forced upon us for the first time during peace by the stark reality of our plight. We must constantly bear in mind that every person engaged in medicine is a person lost to the production of food and exports. Medicine is now not only a humanitarian profession but also an indirectly productive trade."

At times Dr. Roberts' economics seem somewhat elementary and rather flavored with mercantilism, a view which is not unexpected in light of Britain's present drive to increase exports. Dr. Roberts has not intended this as a scholarly article on economics. Treated as comments by a physician regarding economic limits on the extension of medical care, his essay is extremely timely and stimulating—especially in its view that while economics is a "dismal science," those who think that medicine is above economic laws are destined to have their illusion rudely shattered, for a limited and planned economy obviously cannot support a health service expanding with the acceleration that medicine now exhibits."

**The Chicago Survey of Employees Benefit Plans (General Summary).** Research Council for Economic Security, 111 W. Jackson Boulevard, Chicago 1, 1948, 4 pp.

The council is conducting studies in certain metropolitan areas to determine what plans private employers have initiated to help employees meet crises inherent in their working in a specialized economy. This summary states the findings of this council on all types of firms in the Chicago metropolitan area—an area of about a 40 mile radius containing a labor force of about 3,500,000.

While their method of collecting the data, the mailed questionnaire, has certain inherent difficulties in producing representative data, as the Council recognizes, the summary reasonably concludes that at least 50.2 per cent of the workers in the Chicago area are covered by employer-maintained life insurance, 49.5 per cent are covered by employer-maintained prepaid hospitalization, 49 per cent are covered by pension and retirement plans, 40.3 per cent by cash sickness or paid sick leave, 34 per cent by organized cash sickness benefits and 29.3 per cent by prepaid surgical benefits. Other benefit plans were also reported. These figures are quoted as safe minimums for the Chicago area; actual figures are probably higher than this. "Preventive programs" such as organized recreation and industrial hygiene plans are also in considerable evidence.

A more satisfactory sampling technic might arrive at more precise figures. Of further interest would be data on the extent of the benefits offered under the various plans. The survey points out that "the results of this survey show a tremendous amount of protection against crises for workers." A similar study at a later date would certainly be of value in indicating the extent of the growth of such employee protection plans.

*(To Be Continued)*

# Bureau of Legal Medicine and Legislation

## MEDICOLEGAL ABSTRACTS

**Privileged Communications: Attorney's Right to Comment to Jury on Failure to Waive Privilege.**—The plaintiff filed suit for damages for personal injury sustained in an automobile accident. From a judgment in favor of the defendant, the plaintiff appealed to the Supreme Court of Iowa.

During the arguments to the jury, one of the defendant's counsel told the jury that a physician for the plaintiff was not called as a witness so that the jury did not have the benefit of his testimony and "that this jury—that counsel for the plaintiff as well as Mr. White—and myself know why he wasn't called." The plaintiff's attorney objected to such statements as being improper argument and prejudicial. Before the trial court ruled on the objection, another attorney for the defendant stated to the court, in the presence of the jury: "It is the contention that counsel for the plaintiff could and did come in with their objections and kept the doctor from testifying." The issue to be decided on this appeal, said the Supreme Court, is whether or not it is proper for counsel, in argument to the jury, to comment on the exercise by the opposing party of his right not to have his physician testify as to privileged matters.

The Iowa statute concerning the patient's privilege as to matters growing out of the relationship of physician and patient provides: ". . . no practicing . . . physician . . . who obtained such information by reason of his employment . . . shall be allowed, in giving testimony, to disclose any confidential communication properly entrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice. . . . Such prohibition shall not apply to cases where the party in whose favor the same is made waives the rights conferred." This, said the court, has been the statutory law of Iowa since 1851 and it should receive a liberal construction designed to carry out its manifest purpose to make consultation by the patient with his physician entirely confidential and free from anticipation or fear that this confidence will be broken by the examination of the physician as a witness in some legal proceeding.

There seems, however, to be a conflict in the authorities as to whether the exercise of the privilege by one party is a legitimate subject of comment by opposing counsel, continued the court. In one prior Iowa case the offered testimony of plaintiff's former lawyer was objected to by the plaintiff on the ground of privilege and the objection was sustained. The court instructed the jury not to "indulge in any speculation or suppositions concerning what any witness or witnesses might have testified to had they been permitted to testify." In approving this instruction, the Supreme Court of Iowa said: "The ordinary rule is that if one does not produce testimony within his control, or prevents the use of such testimony, the presumption arises that such testimony, if produced, would be adverse to them. But this rule does not apply to privileged communications for reasons too obvious to mention." And from another case: "A party should not be prejudiced by claiming a right which the law gives him."

Fidelity to our rule, that no unfavorable inference arises when a patient exercises his statutory privilege by not calling his doctor or objects to the other party introducing his doctor's testimony, concluded the Supreme Court, demands our adherence to the corrollary rule that opposing counsel, in such circumstances, will not be allowed to comment on such failure to produce the doctor as a witness, or the patient's objections to his testimony. The only purpose of the comment is to lead the jury to infer that the doctor's testimony, if allowed, would be unfavorable to the patient—the very inference condemned in our opinions in prior cases.

Accordingly the Supreme Court held that the conduct of the defendant's attorneys was improper and the judgment in favor of the defendant was reversed.—*Howard v. Porter, 35 N. W. (2d) 837 (Iowa, 1949).*

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American J. Obstetrics and Gynecology, St. Louis
**57**:421-624 (March) 1949. Partial Index

*Oliguria and Anuria in Toxemias of Pregnancy. C. H. Mauzy and J. F. Donnelly.—p. 421.
Evaluation of 354 Consecutive Hysterectomies Performed at Orange Memorial Hospital. C. J. Collins.—p. 438.
Inversion of Vagina Following Hysterectomy. C. J. Andrews.—p. 448.
Simplified Method of Fetal Roentgencephalometry: Results Checked in 482 Cases. R. Torpin and J. L. Allgood Jr.—p. 455.
Use of Crystalline Penicillin G in Treatment of Syphilis in Pregnancy. J. B. Cross, J. R. McCain and A. Heyman.—p. 461.
*Plasma Volume and Extravascular Fluid Volume During Pregnancy and Puerperium. W. L. Caton, C. C. Roby, D. E. Reid and J. G. Gibson.—p. 471.
Certain Aspects of Eclampsia. H. J. Stander and R. W. Bonsnes.—p. 482.
Treatment of Advanced Carcinoma of Ovary. B. Z. Cashman and E. V. Helsel.—p. 492.
Cutaneous Vascular Changes in Women in Reference to Menstrual Cycle and Ovariectomy. E. A. Edwards and S. Q. Duntley.—p. 501.
Changing Concepts of X-Ray Pelvimetry. A. E. Colcher and W. Sussman.—p. 510.
Extraperitoneal Cesarean Section in Profoundly Infected Patient. M. L. McCall.—p. 520.
Review of 445 Pregnancies Complicated by Fibromyomas. D. J. Grandin.—p. 532.
*Anemia of Pregnancy Treated with Molybdenum-Iron Complex. W. J. Dieckmann and H. D. Priddle.—p. 541.
Time of Recurrence of Endometrial Carcinoma. H. Speert.—p. 547.
Method of Forceps Rotation in Posterior Positions. A. J. Tatelbaum.—p. 553.
New Concept in Replacement of Inverted Uterus and Report of 9 Cases. A. B. Johnson.—p. 557.

**Oliguria and Anuria in Toxemias of Pregnancy.**—Mauzy and Donnelly discuss the syndrome of decreased renal output associated with various types of toxemia of pregnancy. They cite 9 cases which came to their attention during the past five years. The incidence in their series of toxemia was 5 per cent with 1 death. The pathogenesis involves many factors, none of which acting alone seems to be responsible, but acting together render the tubular cells susceptible to injury by certain chemical substances. The authors are of the opinion that once oliguria or anuria develops the interruption of pregnancy is mandatory. In view of the tubular damage with leakage of the glomerular filtrate into the blood stream, excessive fluids will lead to cardiac decompensation and pulmonary edema with death; therefore, they must be restricted. Renal decapsulation may be a lifesaving procedure in some cases; in the authors' experience it was of questionable value. Peritoneal irrigation is a valuable procedure; serving as an artificial kidney, it removes the waste products during the period of tubular regeneration.

**Plasma Volume and Extravascular Fluid Volume During Pregnancy.**—Caton and associates investigated the changes that occur during normal pregnancy in the circulating red cell mass and plasma and extravascular fluid volumes. Simultaneous determinations of plasma volume and extravascular fluid volume were made. The plasma volume was found to be increased greatly during pregnancy and to reach maximum volume during the sixty-eighth to fifth day prior to the onset of labor. This increase was 49 per cent when compared with the nonpregnant values thirty days following delivery. Plasma volume had returned to normal nonpregnant values by the thirtieth day after delivery. There was an increase in the amount of extravascular fluid up to the onset of labor. The rate of increase was accelerated during the last trimester with no evidence of any prelabor decrease. In the first week of the puerperium there was a 2,500 cc. decrease in extravascular fluid volume. The extravascular fluid volume, when measured for the final time between the twenty-sixth and sixty-sixth day of the puerperium, was 59 per cent below the maximum prepartum value. The vascular and extravascular spaces show a retention of fluid which varies in amount in each trimester of pregnancy. The percentage increase of plasma volume during the first and second trimesters exceeds the percentage increase of extravascular fluid volume. In the last trimester, the percentage increase in extravascular fluid volume is greater than the percentage increase in plasma volume.

**Molybdenum-Iron Complex in Anemia of Pregnancy.**—Dieckmann and Priddle had gained the impression in earlier investigations that iron salts were of little value in anemia of pregnancy. Reports by Healy and Neary indicated that a molybdenum-iron complex was more efficacious. The authors resorted to treatment with this preparation in pregnant women in whom anemia had been detected by a special screening method in use at the Chicago Lying-in Hospital. Capsules containing 3.0 mg. of molybdenum sesquioxide (approximately 2.5 mg. molybdenum) and 195 mg. of ferrous sulfate (approximately 40 mg. iron) were given to these patients (2 capsules three times a day, after meals). They contained no significant amounts of copper. Complete blood studies had been made, and the hemoglobin determination, hematocrit reading and red blood cell count were repeated every two weeks. The authors found the molybdenum-iron complex very effective in causing significant increases in the hemoglobin concentration of most patients with anemia of pregnancy within a three-week period. If the hemoglobin does not show a significant increase in this period, further hematologic studies are indicated. The hematocrit determination is an easy, rapid and accurate method of determining anemia. It is more accurate than the hemoglobin concentration as it is usually determined. Pregnant patients should have a hematocrit determination every three months, one at or near term, and one also at six weeks post partum. If the hemoglobin is less than 12 Gm. (hematocrit 37 per cent) in the first twelve weeks or is not 12 Gm. or more six weeks post partum anemia is indicated. From the twelfth to the thirty-sixth week the lower limit of the hemoglobin in pregnancy is 10 Gm. (hematocrit 30 per cent) per hundred cubic centimeters. The lower limit from thirty-six weeks to term is 10.5 Gm. (hematocrit 32 per cent) per hundred cubic centimeter.

### American Journal of Diseases of Children, Chicago
**76**:*609-740* (Dec.) 1948

Action of Intravenous Injections of Histamine on Blood of Hemophilic Children. H. N. Sanford, S. Butler and S. R. Kennedy Jr.—p. 609.
Enteral Treatment of Diarrhea in Infancy, Including Epidemic Diarrhea of Newborn. E. S. O'Keefe.—p. 616.
*Electroencephalography of the Newborn: III. Brain Potentials of Babies Born of Mothers Given Seconal Sodium.® J. G. Hughes, Babette Ehemann and U. A. Brown.—p. 626.
*Id.: IV. Abnormal Electroencephalograms of Neonate. J. G. Hughes, Babette Ehemann and U. A. Brown.—p. 634.
Treatment of Staphylococcic Pneumonia and Empyema with Penicillin: Report of 6 Cases, 2 with Pulmonary Pneumatocele. C. G. Watkins, R. W. Tichenor, J. A. Robb and G. B. Forbes.—p. 648.
Prevention of Fetal Anoxia. N. J. Eastman.—p 661.
Fetal Anoxia at Birth and Cyanosis of Newborn: Differential Diagnosis and Management. S. H. Clifford.—p. 666.
Pathologic Conditions Resulting in Fetal Anoxia and Cyanosis of Newborn. W. W. Zuelzer.—p. 679.
Misconception Concerning the Rh Factor and Interruption of Pregnancy. E. L. Kendig Jr. and R. K. Waller.—p. 689.

**Electroencephalography in Babies Born to Mothers Given Seconal Sodium.®**—Hughes and his associates present electroencephalographic observations on a group of newborn infants whose mothers were given varying doses of seconal sodium® (sodium 5-allyl-5-[1-methyl-butyl] barbiturate) during labor. All were normal infants born of women whose labors and deliveries were uneventful. A total of 51 electroencephalograms were obtained on 20 of these infants, tracings on 11 of whom were made during the first twenty-four hours of life. In comparison with electroencephalographic patterns previously found characteristic of normal, full term, sleeping infants, the brain waves of these babies showed a striking electrical cortical depression characterized by a pronounced decrease in slow waves of moderate amplitude and some increase in fast waves of low amplitude. The apparent effect of seconal sodium® in depressing the electrical activity of the baby's cortex persisted for three days in some infants, even when clinical signs of drowsiness had been overcome. This indicates that electroencephalography is a more sensitive index of cortical depression than mere clinical observation.

**Abnormal Electroencephalograms in the Newborn.**—Hughes and co-workers present data on 8 full term newborn infants whose electroencephalograms showed definite abnormalities. Seven of these infants showed clinical neurologic abnormality, while 1 of them was clinically normal. In several of the infants the pattern of neurologic disorder was correlated with localizing electroencephalographic abnormalities. In some infants the electroencephalogram demonstrated cortical electrical abnormality before clinical symptoms and signs had been observed, and electroencephalographic abnormalities persisted in some of the infants after neurologic symptoms had disappeared. Of special interest was the patient who showed electroencephalographic abnormalities while continuing to seem normal clinically. This indicates that electroencephalography of the newborn may detect cortical damage in the absence of clinical symptoms. The authors feel that by correlation of abnormal electroencephalographic findings with some of the factors at play in labor and delivery further refinements in obstetric management may be evolved.

## Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

### **61**:147-290 (Feb.) 1949

Some Medical and Roentgenologic Aspects of Mass Chest Surveys. A. C. Christie.—p. 147.
*Value of Roentgenology in Prognosis of Minimal Tuberculosis. A. L. Cochrane, H. W. Campbell and S. C. Stein.—p. 153.
*Vertebral Angiography. O. Sugar, L. B. Holden and C. B. Powell. —p. 166.
Detection of Gastric Carcinoma by Photofluorographic Methods: Part I. Introduction. J. F. Roach, R. D. Sloan and R. H. Morgan. —p. 183.
Id.: Part II. Equipment Design. J. F. Roach, R. D. Sloan and R. H. Morgan.—p. 188.
Azygos Lobe: Its Involvement in Pulmonary Disease. E. Rothstein. —p. 195.
Occurrence and Diagnosis of Dilatation of Aorta Distal to Area of Coarctation. F. G. Fleischner.—p. 199.
Left Atrial Calcification on Rheumatic Heart Disease. B. S. Epstein. —p. 202.
Case of Bronchial Adenoma Without Signs of Bronchial Obstruction, Concomitant with Minimal Pulmonary Tuberculosis. G. H. Fletcher and M. S. Lombard.—p. 209.
Intraluminal Diverticulum and Other Lesions Producing Intermittent Duodenal Obstruction or Stasis. R. E. Kinzer.—p. 212.
Roentgen Manifestations of Pancreatitis Complicating Mumps. M. H. Poppel and Celia Bercow.—p. 219.
Demonstration of Sinus Tracts, Fistulas and Infected Cavities by Lipiodol. J. M. Dell Jr.—p. 223.
Principles of Fast Electron Therapy in Cancer. E. M. Uhlmann and L. S. Skaggs.—p. 232.
Part Time Radiologic Practice in Hospitals of Small Cities. W. S. Peck.—p. 236.

**Roentgenology in Prognosis of Minimal Tuberculosis.**—Cochrane and associates report on the prognostic value of the roentgenologist's diagnoses: "active," "of questionable clinical significance," and "inactive, of no clinical significance." Eleven hundred cases of minimal tuberculosis, representing, with a few minor exceptions, all the cases of minimal tuberculosis diagnosed at the Henry Phipps Institute for the twenty years 1926 to 1945 have been classified and followed up. The authors analyzed the prognostic value of the roentgenologist's opinion of activity at the time of the first roentgenogram. Both progression rates and death rates indicate that such opinions are of great value in determining the type of treatment for such cases. The error of the roentgenologist has also been estimated by two different methods on the same roentgenograms. Both confirm the recently published opinion that there is a considerable roentgenologic error. The technic of comparison with the errors of a roentgenologist sorting roentgenograms blindly shows that the results are much better than those which would have been expected by chance; in particular, the error in the diagnosis of inactive minimal tuberculosis has been found to be small.

**Vertebral Angiography.**—Sugar and associates subjected a patient in whom a ruptured aneurysm was suspected to bilateral percutaneous carotid arteriography without demonstrating a lesion. The desire to study the vessels of the posterior fossa in the case led to the development of a successful technic of deliberate percutaneous vertebral angiography. The authors describe a new percutaneous technic for vertebral angiography, which they have used in over 20 cases, with good visualization in all but 2 early attempts. They describe normal vertebral-basilar angiograms and describe 5 cases with reproductions of vertebral angiograms showing the type of information which can be obtained. Two of these are cases of basilar aneurysms visualized for the first time ante mortem without operation. One shows collateral circulation of the entire cerebrum in a patient with traumatic carotid-cavernous fistula. One concerns a thalamic carcinomatous metastasis, and one describes a patient with posterior fossa arteriosclerosis. The authors review the historical development of vertebral angiography and make a survey of the recent publications on aneurysms of the posterior intracranial circulation. They discuss the indications and complications of vertebral angiography. The method is indicated in patients in whom air study fails to visualize the posterior part of the third ventricle, the aqueduct of Sylvius and the fourth ventricle. It would be even more useful in those in whom clinically indicated exploration of the posterior fossa fails to reveal a cause for the patient's symptoms. This holds especially for patients with seizures, who have otherwise signs and symptoms of posterior fossa neoplasm and in whom the lesion may well be at the tentorium. Alternatively, it may come to be preferred over air injections as a first diagnostic aid even though (at least in the hands of the authors) a general anesthetic is required. Angiography of either carotid or vertebral vessels seems to be readily tolerated in patients with increased intracranial pressure and does not carry with it the dangers of disturbing the ventricular equilibrium such as occurs in ventriculography; nor is it necessary to follow angiography with exploration.

## Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

### **33**:101-200 (March) 1949

Morphology, Cultural Characteristics, and a Method for Mass Cultivation by Reiter Spirochete. A. Gelperin.—p. 101.
*Problem of "Biologic False" or Nonspecific Positive Serologic Test for Syphilis: Clinical Observations and Case Studies. J. H. Stokes and G. W. James.—p. 114.
*Efficacy of Penicillin Treatment of Early Syphilis in Army. L. Altshuler, B. D. Karpinos, W. Leifer and J. J. Ozog.—p. 126.
Chronic Adhesive Arachnoiditis (Probably Due to Virus of Lymphogranuloma Venereum). F. E. G. Valergakis, A. Sutherland and H. Koteen. —p. 139.
Treatment of Syphilitic Primary Optic Atrophy with Penicillin and with Penicillin and Malaria. S. F. Horne and A. C. Curtis.—p. 143.
Experimental Studies on Pathogenicity of Donovania Granulomatis. R. B. Dienst, C. H. Chen and R. B. Greenblatt.—p. 152.
Aerorectogram as Aid in Evaluation of Rectal Stricture Due to Lymphogranuloma Venereum. R. F. Jones.—p. 158.
Evaluation of Twelve Media for Isolation of Gonococcus. C. M. Carpenter, M. A. Bucca, T. C. Buck and others.—p. 164.
Treatment of Gonorrhea with Streptomycin. S. R. Taggart, H. L. Hirsh, F. D. Hendricks and others.—p. 180.
Treatment of Chancroid with Streptomycin. S. R. Taggart, H. L. Hirsh, F. D. Hendricks an dothers.—p. 180.
Gonococcal Infection of Median Raphe. R. A. Mee.—p. 182.
Intent of American Venereal Disease Association. R. W. Barnes.—p. 187.

**"Biologic False" Reaction for Syphilis.**—Stokes and James examined records of patients who had been under extended observation for the interpretation of a positive serologic reaction for syphilis. Of 68 patients for whom a diagnosis of nonspecific positive reaction had been considered, 23 were eliminated because an ultimate diagnosis of syphilis was made. The authors emphasize the complicated and puzzling character of the biologic false or nonspecific positive serologic reaction for syphilis. It appears to be part of a general infection reaction mechanism shared by many diseases and forms of injury, more developed in some persons than in others. Febrile states, especially those due to infections, virus diseases, foreign protein inoculations and certain diseases, such as leprosy, malaria and infectious mononucleosis, are particularly apt to bring out biologic false positive reactions and reactors. There is reason to suspect that a seronegative status in a syphilitic person may be converted into a seropositive state by some of the agencies that can produce a biologic false positive state, and that syphilitic patients approaching serologic cure may be maintained for some time in a low titer fluctuation by a tendency toward biologic false positive reactions. The proportion of biologic false or nonspecific positive reactions in a series of routine positive reactions may approach 40 per cent of the positive reactions obtained in a run or survey. But the proportion of biologic false positive reactions in all tests and in serologic surveys probably does not exceed 1 in 700. An effort should be made to repeat every test in which the reaction is positive, to check the commoner possibilities of biologic false positive reaction at the time, as well as after, the test result is reported. Treatment should be withheld until the situation has been evaluated. The pregnant woman approaching term might be an exception. The temptation to use 10,000,000 units of penicillin as a short cut to a decision (accepting syphilis as the diagnosis) or "just in case" should be resisted. The decision to treat must be reached only after every possibility has been investigated.

**Penicillin in Early S[illegible]** [illegible] and co-workers examined the efficacy of [illegible] practiced by the Army in the treatment of early syphilis. The prescribed treatment of primary and secondary syphilis consisted of sixty consecutive intramuscular injections of 40,000 units of aqueous *amorphous penicillin* at three hour intervals for seven and one-half days, amounting to a total dose of 2,400,000 units. Evaluating the results obtained in 31,000 soldiers with early syphilis, the authors state that the incidence of failure was lowest in seronegative primary syphilis (87.3 per thousand patients of both racial groups), higher in seropositive primary syphilis (186.2 per thousand patients) and highest in secondary syphilis (282.7 per thousand patients). The total failure rate was 159.1 per thousand treated patients. The failure rate was consistently greater for Negro than for white patients. The total failure rate for white was 100.5 per thousand patients, against a failure rate of 227.0 per thousand Negro patients. It has been suggested that this difference reflects a higher incidence of reinfection among Negro patients. The authors gained the impression that some additional factors might be responsible for the higher failure rates among Negroes, since they found no significant differences in the distribution of white and Negro failures by type of failure. Patients treated during the latter half of 1945 had a failure rate of 239.4 per thousand patients, which was about 86 per cent greater than the failure rate of patients treated during the latter half of 1944. This has been attributed to a chemical change in amorphous penicillin consisting of an increase in the ineffective K species at the expense of the potent G species. This situation no longer prevails. Among the 5,600 patients for whom the results of cerebrospinal fluid examinations were available, only 3 doubtful and 21 abnormal spinal fluids were found, which is an incidence of about 4 abnormal spinal fluids per thousand persons examined. This seems to indicate a remarkable neurotropic effect of penicillin.

### American Journal of Tropical Medicine, Baltimore

**29:1-172 (Jan.) 1949. Partial Index**

Action of Antimalarial Drugs in Mosquitoes Infected with Plasmodium Falciparum. L. A. Terzian and A. B. Weathersby.—p. 19.
Malaria Reconnaissance of the State of Veracruz, Mexico. J. Bustos Castellanos, L. Cerdán Murrieta, G. Lassman and Carmen Ortiz. —p. 23.
*Synergistic Action of Penicillin and Streptomycin on Endameba Histolytica Cultures. H. Seneca, E. Henderson and Martha Harvey.—p. 37.
Purification of Hemoflagellate Cultures with Antibiotics. H. Seneca, E. Henderson and Martha Harvey.—p. 41.
Additional Observations on Trypanosoma Cruzi Chagas, from Arizona in Insects, Rodents, and Experimentally Infected Animals. S. F. Wood. —p. 43.
*Immunity to Yellow Fever Six Years after Vaccination. G. W. A. Dick and K. C. Smithburn.—p. 57.
Typhus Fever in Mexico: Study of Epidemiology by Means of Complement-Fixation. G. Freeman, G. Varela, H. Plotz and C. O. Mariotte. —p. 63.
Voluntary Infection with Schistosoma Haematobium. C. H. Barlow and H. E. Meleney.—p. 79.

**Synergistic Action of Penicillin and Streptomycin on Endameba Histolytica.**—Seneca and his co-workers found that neither penicillin nor streptomycin is amebicidal in concentrations of 100 to 1,000 units per cubic centimeter. A combination of the two in equal unitage kills amebas in the first generation at a total concentration of 2,000 units per cubic centimeter, and in the second generation at 1,000 units per cubic centimeter. The latter concentration is found not to be bactericidal; hence the action is probably a direct one rather than an elimination of necessary bacterial products. The authors suggest that the combination of penicillin and streptomycin may have therapeutic usefulness, especially in preference to intrinsically more toxic agents, such as emetine hydrochloride. Such a therapy might be expected also to destroy the secondarily invading bacteria, with clinical benefit.

**Immunity to Yellow Fever Six Years After Vaccination.**—Dick and Smithburn present evidence which indicates that immunity to yellow fever endures for at least six years after inoculation with 17D yellow fever vaccine of adequate potency. They stress that there is no significant difference either in the percentage developing antibodies or in the duration of the immune response, when children are compared with adults. This is of importance in the formulation of public health regulations and, in the opinion of the authors, no distinction need be or should be made in the application of these regulations with respect to age. Yellow fever vaccination certificates should be accepted as valid for at least six years after appropriate inoculation with potent vaccine.

### Annals of Surgery, Philadelphia

**129:161-288 (Feb.) 1949**

Experimental Reconstruction of Cardiac Valves by Venous and Pericardial Grafts. J. Y. Templeton III and J. H. Gibbon Jr.—p. 161.
*Metabolism of Calcium in Patients with Spinal Cord Injuries. L. W. Freeman.—p. 177.
Displacement of Esophagus into New Diaphragmatic Orifice in Repair of Para-Esophageal and Esophageal Hiatus Hernia. K. A. Merendino, R. L. Varco and O. H. Wangensteen.—p. 185.
*Sigmoidocutaneous Fistulae Resulting from Diverticulitis of Sigmoid Colon. L. H. Mayfield and J. M. Waugh.—p. 198.
Neurogenic Factor in Experimental Traumatic Shock: Summary of Recent Studies Including Observations on Procainized and Spinal Dogs. S. C. Wang and R. R. Overman.—p. 207.
Discussion of Tendon Repair: Clinical and Experimental Data on Use of Gelatin Sponge. H. M. Nichols.—p. 223.
Technic of Exposure for Diverticula of Third and Fourth Parts of Duodenum. R. A. Mino and R. G. Livingstone.—p. 235.
Surgical Treatment of Hernia in the Aged: Study of Eighty-Two Consecutive Patients over Sixty Years of Age. G. Strenger.—p. 238.
Surgery in Situs Inversus. H. M. Blegen.—p. 244.
Factors in Mortality of Ruptured Appendix. M. L. Griswold and W. K. Goodspeed.—p. 260.
Neurofibroma: Benign Intraspinal-Intrathoracic "Hour-Glass" Tumor with Paraplegia. E. Alexander Jr. and R. M. Janes.—p. 267.
Gumma of Lung: Report of Case Treated by Lobectomy. C. W. Findlay Jr., W. L. Lehman and L. A. Rottenberg.—p. 274.

**Calcium Metabolism with Spinal Cord Injuries.**—Freeman directs attention to the high incidence of calculi of the urinary tract in patients with paraplegia. The report is based on clinical observation, particularly with regard to the calcium metabolism made on over 700 male adults (ages 18 to 50) who had suffered injury to the spinal cord during and shortly after World War II. The incidence of calculi of the urinary tract during prolonged recumbency was found to be between 23 and 35 per cent. The author feels that, while considerable emphasis has been placed on the role of recumbency, insufficient stress has been placed on weight bearing. It was found that ambulation reduces the incidence of calculi to such a degree that the presence of a calculus can be taken as an indication of the failure to ambulate sufficiently. Neurogenic ossifying fibromyositis is discussed as a reflection of the aberrant state of calcium metabolism in the presence of infectious and inflammatory processes.

**Fistulas from Diverticulitis of Colon.**—Mayfield and Waugh reviewed 46 cases of diverticulitis of the sigmoid colon in which there were bladder or cutaneous fistulas and in which a segment of colon had been removed surgically at the Mayo Clinic. They discuss 17 cases in which sigmoidocutaneous fistulas have occurred. The excised segment of the colon presented many diverticula. The wall of the bowel was involved in a chronic extramucosal proliferative inflammatory process. Areas of necrosis, abscess formation and perforation were seen. The presence of the fistulas was accompanied by abdominal pain, constipation, chills and fever. Each fistula followed some type of surgical operation, usually incision and drainage for an acute suppurative process within the abdomen. These patients had had symptoms suggestive of diverticulitis for an average of approximately 2.5 years when their fistulas developed. The fistulas had been present for an average of approximately 1.5 years when the patients came to the clinic. Roentgenologic examination of the colon was the most important aid in diagnosis. Other types of internal fistulas were present in about one third of the cases. Fistulas of this type tend to close spontaneously and should be allowed ample time, approximately twelve months, to do so. When surgical treatment is carried out, excision of the diseased segment of colon should be done and should usually be preceded by a temporary transverse colostomy made six months prior to resection. The choice of procedure should depend on the conditions present in the individual case. In this group of 17 patients with sigmoidocutaneous fistulas there were eighteen segmental resections of the colon with no operative deaths. Sixteen patients were relieved of their external fecal fistulas.

## Archives of Dermatology and Syphilology, Chicago

58:249-354 (Sept.) 1948

Textile Dermatitis in Men. G. A. G. Peterkin.—p. 249.
Herpes Zoster Ophthalmicus: Results of Treatment with Transfusions of Convalescent Blood. F. T. Becker.—p. 265.
Examples of Cross Sensitization in Allergic Eczematous Dermatitis. R. L. Baer.—p. 276.
Micropapular Tuberculid and Rosacea: Clinical and Histologic Comparison. C. W. Laymon and E. P. Schoch Jr.—p. 286.
Exogenous Cutaneous Leishmaniasis Proved by Culture. M. A. Forbes Jr. —p. 301.
Tuberculosis Cutis Colliquativa (Tuberculous Gummas) Healed Rapidly with Local Applications of Promin® Jelly: Report of Case. J. Garb. —p. 308.
Plasma Protein and Dermatitis: Preliminary Report. H. L. Keim, D. C. Frisch and Alice E. Palmer.—p. 314.
Dermatitis of Hands Due to Ingested Allergens. B. H. Winston and R. L. Sutton Jr.—p. 335.
Story of Original "Porcupine Men": Classic Descriptions of Ichthyosis Hystrix. W. L. Marmelzat.—p. 349.

## Archives of Neurology and Psychiatry, Chicago

60:1-106 (July) 1949

Electrodiagnosis of Lesions of Peripheral Nerves in Man. L. J. Pollock, J. G. Golseth, F. Mayfield and others.—p. 1.
*Calcifying Epileptogenic Lesions: Hemangioma Calcificans; Report of Case. W. Penfield and A. Ward.—p. 20.
*Manic-Depressive Psychosis: Course When Treated and Untreated with Electric Shock. P. E. Huston and Lillian M. Locher.—p. 37.
Spinal Subdural Abscess. H. Freedman and B. J. Alpers.—p. 49.
Ergotamine Tartrate in Treatment of Combat Exhaustion. P. V. Lemkau and R. B. Sampliner.—p. 61.
"Pentothal Sodium" as Adjunct in Therapy of Anxiety Hysteria: Report of Case. M. Rosenbaum.—p. 70.
Intramuscular Use of Tubocurarine in Chronic Spasticity Due to Disease of Central Nervous System: Further Clinical Investigation. M. Nathanson, S. Lesser, G. Gordon and N. Gresser.—p. 77.
Aneurysm of Terminal Portion of Anterior Cerebral Artery. O. Sugar and M. Tinsley.—p. 81.
Unilateral Frontal Anhidrosis and Miosis Occurring After Petrous Apicectomy (Ramadier Technic): Report of Case. K. M. Simonton and J. R. Gay.—p. 86.

**Calcifying Epileptogenic Lesions.**—Penfield and Ward say that their attention was called to the occurrence of calcified lesions in the temporal lobe of patients with epilepsy when they were consulted by a man aged 21 because of epileptic seizures. His attacks were characteristic of temporal lobe origin and roentgenograms demonstrated a peculiar intracerebral calcification in that lobe. In order to gain an idea of their frequency, cases of calcified epileptogenic lesions of the temporal region were collected at the Montreal Neurologic Institute for a six year period. The lesions in 5 of the 12 cases were of the type designated as hemangioma calcificans. In 2 of the remaining 7 cases, the tumor was a racemose hemangioma; in 1, a bony arachnoidal plaque, and in 2, a post-traumatic degenerative calcification of an intracerebral hematoma; in 2 cases the diagnosis was tuberculoma, although there was no verification of this. All the lesions called hemangioma calcificans occurred in the temporal lobe and had been producing seizures for one to thirty years. Four of them were successfully removed at operation. The authors hope that in the future this type of lesion may be recognized and treated.

**Electric Shock in Manic-Depressive Psychosis.**—Huston and Locher compared two groups of patients with a diagnosis of manic-depressive psychosis: a control group of 80, and a group of 74 who were treated with electric shock. These groups were comparable in most respects. The authors arrive at the conclusion that electric shock therapy is indicated in the treatment of manic-depressive psychosis (depressive type, mixed type, perplexed type and type with paranoid features). Shock therapy produces a rate of recovery as high as that of spontaneous recovery, reduces the incidence of suicide, probably prevents deaths and shortens the duration of depressions. It should be emphasized that the length of a depression cannot be predicted in a given case and that some depressions, particularly in older patients, may be very long—the longest in the control series being ten years.

## Archives of Surgery, Chicago

58:1-128 (Jan.) 1949

Surgical Approach to Cancer. J. J. Morton.—p. 1.
Role of Splenectomy in Thrombopenic Purpura. G. Bogardus, J. G. Allen, L. O. Jacobson and C. L. Spurr.—p. 16.
*Multiple Arterial Emboli: Three Successful Embolectomies in Case of Bacterial Endocarditis. H. W. Scott Jr. and J. M. Williams Jr. —p. 28.
*Ligation of Carotid Arteries for Advanced Malignant Neoplasms of Head and Neck. A. J. Vosseler and B. J. Ficarra.—p. 35.
Use of Barrel Stave Grafts in Spinal Fusion. H. R. McCarroll and R. Odell.—p. 42.
Histologic and Chemical Aspects of Thrombus Formation. E. Friedlander.—p. 48.
Colostomy Bag: New, Single Use, Disposable Bag with Individually Molded Collar. A. M. Brown.—p. 54.
Complications of Injection of Thorotrast in Carotid Artery. B. Blades and others.—p. 60.
Orthopedic Surgery in Army Air Forces During World War II: III. Psychologic Problems, Convalescent Care and Rehabilitation. J. V. Luck, H. M. A. Smith, H. B. Lacy and A. R. Shands Jr.—p. 75.
Progress in Orthopedic Surgery for 1946: VI. Conditions Involving Hip Joint. J. J. Fahey.—p. 89.
Id.: VII. Conditions Involving Shoulder, Neck and Jaw. D. Bosworth. —p. 97.
Id.: VIII. Congenital Deformities. J. H. Kite.—p. 107.

**Three Embolectomies in Patient with Bacterial Endocarditis.**—Scott and Williams present the case of a young man with bacterial endocarditis which illustrates the value of prompt embolectomy in three successive episodes of arterial embolism. The case illustrates the value of prompt recognition of the situation in repeated episodes of peripheral embolism and the desirability of close cooperation between medical and surgical services in utilizing this treatment. Arterial embolism is a true surgical emergency, and a diminished cardiac reserve should not be a deterrent to arterial embolectomy, with local or regional anesthesia. Lumbar sympathetic block was not performed before the second embolectomy because a spinal anesthetic, accomplishing the same purpose, was given almost immediately. During the second and third embolectomies no excessive bleeding was encountered, despite the fact that the patient was fully dicumarolized. All wounds healed by first intention without hematoma or ecchymosis. Although penicillin has improved the prognosis for patients with bacterial endocarditis, several observers have noted an increased incidence of embolism since the advent of intensive penicillin therapy of this disease. It is possible that, in the future, cases of this type will be more frequently encountered.

**Ligation of Carotid Arteries for Neoplasms of the Head and Neck.**—Vosseler and Ficarra show that in the treatment of eroding neoplasms of the head and neck ligation of the major arteries supplying these anatomic areas may become a necessity for the preservation of life. It may be necessary to ligate the common carotid artery or the external carotid artery, and sometimes certain of its branches. Ligation of these vessels is advocated (1) to protect against bleeding, as a preliminary step to a radical surgical procedure on the head or neck; (2) to control active hemorrhage, and (3) to diminish the blood supply to inoperable neoplastic lesions. The authors discuss the approach to the carotid sinus and present observations on 26 patients in whom ligation of the carotid arteries was performed for advanced malignant neoplasm of the head and neck. The survival of 21 patients indicates that this procedure is not associated with a formidable mortality. Follow-up studies on these patients indicate that the longest survival after operation was three years. Ligation of the carotid arteries is advocated as a valuable aid in the management of patients with advanced malignant neoplasms of the head and neck.

## Cancer, New York

### **1**:547-724 (Nov.) 1948

Tumors of Thymus in Relation to Thymic Epithelial Anlage. Elizabeth Lowenhaupt.—p. 547.
Multiple Primary Carcinomas of Large Intestine. J. F. Thomas, M. B. Dockerty and J. M. Waugh.—p. 564.
*Occult Carcinomas of Thyroid: Their Bearing on Concept of Lateral Aberrant Thyroid Cancer. P. Wozencraft, F. W. Foote Jr. and E. L. Frazell.—p. 574.
Corpus Cancer: Clinical, Pathologic and Etiologic Aspects. H. Speert. —p. 584.
*Effect of Sex Hormones on Advanced Carcinoma of Breast. S. G. Taylor III, D. P. Slaughter, W. Smejkal and others.—p. 604.
Resection of Axillary Vein in Radical Mastectomy: Its Relation to Mechanism of Lymphedema. J. Macdonald.—p. 618.
Localization and Treatment of Papillomas of Breast. H. C. Saltzstein and R. S. Pollack.—p. 625.
*Use of Nitrogen Mustards in Palliative Treatment of Carcinoma: Particular Reference to Bronchogenic Carcinoma. D. A. Karnofsky, W. H. Abelmann, L. F. Craver and J. H. Burchenal.—p. 634.

**Carcinomas of Thyroid and Lateral Aberrant Thyroid Cancer.**—Wozencraft and his co-workers present several cases which illustrate the difficulty of establishing a valid diagnosis of "lateral aberrant thyroid" carcinoma. The sequence of events in these cases would have served to support such a diagnosis had investigation ceased with the removal of the tumors of the neck or with the usual pathologic examination of thyroid tissue subsequently resected. In each case there was an encapsulated mass in the neck containing a thyroid tumor of papillary and follicular structure, and, after the diagnosis made on this first tissue investigated, hemithyroidectomy was done in 2 cases and thyroidectomy in the third. Subsequent procedures resulted in the discovery of similar tumor tissue within the thyroids. The important fact is that careful gross examination did not reveal the lesion within the thyroid; the cancers were discovered only after exhaustive microscopic study of the thyroid tissue. The authors feel that at present there is enough information about the behavior of papillary thyroid carcinoma to account for many events that formerly seemed to require the "lateral aberrant" theory for satisfactory explanation. The slow growth of many of these tumors and the survival for decades of patients with metastasis no longer need preclude the conception that these tumors are malignant. In a large proportion of reported cases of "lateral aberrant thyroid" tumors, similar tumors have been found in the thyroid when it was explored. These findings can be explained more readily by the concept that they represent primary thyroid tumors with metastasis than is possible with the "lateral aberrant" concept.

**Effect of Sex Hormones on Carcinoma of Breast.**—Taylor and his associates observed the effects of estrogenic substances in the last eighteen months on 42 patients with advanced inoperable carcinoma of the breast. They selected 29 patients with advanced carcinoma of the breast for androgen therapy. In this group there were more patients of younger age and more with osseous metastases than in the group given estrogens; included here, too, were patients who showed a poor response to estrogens. It was found that diethylstilbestrol and ethinyl estradiol produced regression in primary lesions and in soft tissue metastases of cancer of the female breast and apparent inhibition of osseous metastases in certain cases. These effects were found in no more than half the patients treated. Age was the only clearly determined factor influencing the response of these patients to estrogens. The most satisfactory results are obtained in patients more than 60 years of age. Apparent acceleration of tumor growth was occasionally produced by estrogens in younger patients, less often in older ones. Androgens produced reduction in soft tissue, as well as in osseous metastases in some cases. The response to androgens is similar to that of estrogens, except that androgens are effective in both younger and older age groups, whereas estrogens may more frequently cause acceleration of growth in the younger age group. Some patients seem to respond equally well to either drug, while others respond to neither. Androgens also occasionally produce acceleration of tumor growth. Androgens controlled the pain and produced recalcification of osseous metastases more efficiently than estrogens. Neither estrogens nor androgens produced a permanent control of metastatic breast cancer.

**Use of Nitrogen Mustards in Carcinoma.**—Karnofsky and associates have obtained, in the course of their study of the effects of the nitrogen mustards on various types of neoplastic disease, a remarkable temporary remission in a patient with an anaplastic carcinoma of the lung. This observation prompted the more extensive trial of the nitrogen mustards in primary lung carcinoma. Methyl-bis (beta-chloroethyl) amine hydrochloride ($HN_2$), a nitrogen mustard, was used in the treatment of 35 patients with inoperable carcinoma of the lung. In nearly three fourths of the patients some clinical improvement occurred. This was evidenced by an alleviation in symptoms such as cough, dyspnea, hemoptysis, pain, weakness and the syndrome associated with obstruction to the superior vena cava and by such objective changes as regression of pulmonary and metastatic lesions and absorption of pleural effusions. The improvement usually lasted from two weeks to two months, and further courses of the drug were usually not as effective as the first. In the rapidly growing, anaplastic lung cancer, the nitrogen mustard frequently alleviated symptoms and appeared to interrupt the course of the disease briefly; here it may be more effective and sometimes less hazardous than roentgen therapy. Some clinical improvement was produced also in the more slowly progressing lung tumors, but in these conditions, particularly in the early stages, roentgen therapy may alleviate symptoms for long periods. It is suggested that nitrogen mustard may occasionally be effective as an adjuvant to roentgen therapy in the palliative management of lung cancer. In 1 patient with a recurrent pleural effusion caused by metastases to the pleura, the intrapleural injection of $HN_2$ prevented further formation of fluid. Of 18 patients presenting a miscellaneous group of tumors the use of $HN_2$ caused brief clinical improvement in 2 with metastatic carcinoma of the prostate no longer responding to hormonal therapy and in 1 patient each with carcinomatosis from a gastric cancer, metastatic seminoma, carcinomatosis from adenocarcinoma of the uterus, neurogenic sarcoma and neuroblastoma.

## Florida Medical Association Journal, Jacksonville

### **35**:471-526 (Feb.) 1949

Congenital Heart Disease. E. Evans.—p. 487.
Saddle Block Analgesia for Obstetrics. T. H. Bates.—p. 491.
Management of Cholecystitis. C. D. Brooks.—p. 493.
Some Safeguards in Antibiotic Therapy with Special Reference to Penicillin and Streptomycin. J. Farrington and J. F. Wilson.—p. 497.

### **9**:547-582 (March) 1949

Incidence and Diagnosis of Bronchogenic Carcinoma. L. L. Knight. —p. 547.
Murine Typhus Fever E. R. Rickard.—p. 550.
Tetanus: Report of Case. J. S. Hood and W. H. Winchester.—p. 555.

## Illinois Medical Journal, Chicago

### **95**:65-124 (Feb.) 1949

Reconstruction Surgery of Face and Neck. W. A. McNichols.—p. 79.
Earlier Diagnosis of Carcinoma of Breast. L. P. River and J. Silverstein.—p. 85.
Viral Hepatitis. R. B. Capps.—p. 88.
General Practitioner and Treatment of Crossed Eyes. L. Bothman. —p. 93.
Electroshock Therapy in Patients with Severe Organic Disease. L. A. Kaplan and J. D. Freund.—p. 96.
Erosion of Gastroepiploic Vein Simulating Ulcer Syndrome. L. B. Shpiner.—p. 102.
Polyneuritis with Bladder Paresis Following Rabies Vaccine Injections. E. C. Wrightsman.—p. 105.

## Journal of Aviation Medicine, St. Paul

### **20**:1-90 (Feb.) 1949

Comparison of Ortho-Rater with Clinical Ophthalmic Examinations. H. A. Imus.—p. 2.
High Velocity Wind Blast on Personnel and Equipment. A. T. Kornfield and J. R. Poppen.—p. 24.
Considerations in Selection of Flying Sun Glasses. J. L. Matthews. —p. 39.
Health Maintenance of Test Pilots. F. E. Poole and R. W. Besser. —p. 47.
RCAF Aircrew Selection Methods. R. V. Manning and L. A. Yellowlees.—p. 58.
Suggested Plan for Air Evacuation of Casualties. K. E. Pletcher. —p. 62.
Physical Fitness for Strenuous Work in Relation to Survival Situation in Cold Environment. A. J. Miller.—p. 65.
Note on Wendt's Views of Importance of Psychologic Factors in Motion Sickness. I. Zwerling.—p. 68.

### Journal of Nutrition, Philadelphia

37:1-162 (Jan.) 1949. Partial Index

*Corneal Changes in Rat with Deficiencies of Pantothenic Acid and of Pyridoxine. L. L. Bowles, W. K. Hall, V. P. Sydenstricker and C. W. Hock.—p. 9.
Mouse Growth Assay Procedures for "Animal Protein Factor." D. K. Bosshardt, W. J. Paul, Kathleen O'Doherty and others.—p. 21.
Influence of Age and of Vitamin A Intake on Storage of Vitamin A in Liver of Rat. N. B. Guerrant.—p. 37.
Thiamine Requirement of Normal Infant. L. E. Holt Jr., Rosa L. Nemir, Selma E. Snyderman and others.—p. 53.
Vitamin Studies in Middle-Aged and Old Individuals: II. Correlation Between Vitamin A Plasma Content and Certain Clinical and Laboratory Findings. Margaret Chieffi and E. Kirk.—p. 67.
*Self Selection of Diet: IX. The Appetite for Thiamine. E. M. Scott and Ethel L. Verney.—p. 81.
Phlorhizin Diabetes in Vitamin Deficiencies: Conversion of Protein to Glucose and Serum Phosphatase During Deficiencies of Thiamine, Riboflavin and Pyridoxine. P. D. Bartlett and O. H. Gaebler.—p. 93.

**The Cornea in Vitamin Deficiencies.**—Bowles and co-workers observed heavy vascularization, thickening and opacity of the cornea in 13 of 22 rats which were placed on a pantothenate-deficient diet when 41 to 61 days of age. Similar but less severe changes were seen in 11 of 23 rats placed on a pyridoxine-deficient diet when 45 to 57 days of age. The changes observed were similar to those observed in early vitamin A deficiency and in deficiencies of isoleucine and of valine.

**Self Selection of Diet.**—Scott and Verney describe experiments on the appetite of rats for thiamine-containing foods. Rats with thiamine deficiency show a preference for diets containing as little as 0.1 and as much as 1,000 parts per million of thiamine. The appetite for thiamine-containing foods was not universal in thiamine-deficient rats, and a small minority always made a poor choice. Rats fed a diet with a critically low concentration of thiamine were in better condition than rats offered a choice between this diet and a thiamine-free diet. Appetite for thiamine-containing foods was not established until the animals were distinctly deficient as judged by weight gain and food intake. It was concluded that while the learned appetite for thiamine can lead to better nutrition than would wholly random eating, it can at best only approach, and under critical conditions fails to approach, the benefit obtained by obligatory eating of a diet prescribed on the basis of known requirements.

### Kansas Medical Society Journal, Topeka

50:57-108 (Feb.) 1949

Sliding Hernia. R. K. Gilchrist.—p. 57.
Comminuted Colles Fractures. C. K. Wier.—p. 60.
Lymphocytic Choriomeningitis—Detection of Virus in Body Fluids of Patient. H. A. Wenner, M. M. Swan and I. Heilbrunn.—p. 64.
"Trigger Areas" as Cause of Persistent Chest and Shoulder Pain in Myocardial Infarction or Angina Pectoris. H. R. Landmann.—p. 69.

50:109-148 (March) 1949

*Uremia in Obstructive Uropathy. W. L. Valk.—p. 110.
*Khellin in Bronchial Asthma. R. H. Major.—p. 114.
Use of Penicillin in Ambulatory Treatment of Syphilis in Pregnancy. M. S. Allen and M. H. Delp.—p. 116.
Therapy of Burns. C. A. Hardin and D. W. Robinson.—p. 120.

**Uremia in Obstructive Uropathy.**—Valk discusses the uremic manifestations found in association with obstructive nephropathy. The uremic syndrome observed in patients with obstructive nephropathy may be explained adequately on the basis of the inorganic acidosis, the hypocalcemia, the dehydration, the anemia and the vitamin deficiency. Correction of these abnormalities has caused disappearance of the syndrome in uremic patients even in the presence of continued nitrogen retention. Since the nonprotein nitrogen of the blood represents only an index of filtration pressure and not necessarily a measure of renal damage, it becomes an index of renal damage only when there is associated acidosis and hypocalcemia. If the nonprotien nitrogen is high and the carbon dioxide-combining power is normal, the patient requires only adequate urinary drainage to release the increased intratubular hydrostatic pressure. It is not necessary to postpone operative procedures in such patients since there is no significant renal damage if the carbon dioxide-combining power is normal. The author operates on patients with obstructive renal disease and with nitrogen retention if the carbon dioxide-combining power is normal, or, if it is abnormal, as soon as the acidosis has been corrected by giving 100 cc. of sixth molar sodium lactate intravenously for each volume per cent the patient's carbon dioxide-combining power is below 60 volumes per cent.

**Khellin in Bronchial Asthma.**—Major studied the effectiveness of a new drug in the treatment of asthma. The drug is khellin or khellinin, the active principle extracted from the seeds of the umbelliferous plant Ammi visnaga, known in Arabic as *Khella,* which grows wild in the Mediterranean area and in Arabia. He reviews reports on this drug published by Anrep and others in the British literature. He obtained a limited supply so that he could treat 12 patients, all of whom had severe bronchial asthma and could be relieved during attacks only by doses of epinephrine or aminophylline so large as to be regarded as potentially dangerous. All had found diphenhydramine hydrochloride and tripelennamine hydrochloride disappointing. With the exception of 1 of the patients, who could not take the drug, all experienced great relief from the use of khellin. The author concludes from his admittedly limited experience that khellin is of great value in bronchial asthma. The drug is still expensive.

### Michigan State Medical Society Journal, Lansing

48:169-232 (Feb.) 1949

Rational Application of Sedative and Analgesic Drugs. S. C. Cullen.—p. 169.
Sodium and Water Excretion in Pregnant Women. W. E. Brown and J. T. Bradbury.—p. 174.
Unusual Civilian Thoracoabdominal Injury. K. W. Linsenman.—p. 182.
Periodic Diagnosis of Infant Development. A. Gesell.—p. 185.
Acute Abdominal Emergencies. P. Thorek.—p. 189.
Urologic Aspects of Abdominal Pain. J. E. Dees.—p. 195.
*Present Status of Treatment of Peptic Ulcer. W. Walters, B. C. Brownson and S. K. Phillips.—p. 202.
*Vagotomy for Peptic Ulcer. J. E. Summers.—p. 209.
Treatment of Tinea Capitis in General Practice. L. Carrick.—p. 213.

**Present Status of Treatment of Peptic Ulcer.**—Walters and associates of the Mayo Clinic report on a series of 177 patients, 83 of whom had been previously reported. In this series vagotomy was done with or without other gastric operations, and the late results were considered excellent in 79 per cent of the cases. There were 5 hospital deaths or a mortality rate of 2.8 per cent. Disturbances of motility occurred in the immediate postoperative period in 19 cases and in 14 persisted for three and a half to eighteen months. In the 77 patients of series 1, 5 patients had proved recurring ulcers and in addition 9 had recurrence of the symptoms of ulcer and one could not help considering the possibility of recurrence of the ulcer. The total of these showed an incidence of 18.2 per cent of patients who had had a persistence or recurrence of their ulcer symptoms. In 11 of these 14 cases, in which insulin tests were made after operation, results were negative. In 7 instances of gastrojejunal ulcer after gastroenterostomy, in which the gastroenteric anastomosis and the gastrojejunal ulcers were removed, continuity of the gastrointestinal tract was restored and vagotomy was performed. Two of the patients later had abdominal pain, loss of appetite and weight, and craters of duodenal ulcers were seen on roentgenologic examinations months later. This incidence of recurrence is only slightly lower than it is when the same procedures are employed without vagotomy. It would seem that the Hollander insulin test does not always indicate the completeness of vagotomy, or that complete vagotomy is not necessary in every case to accomplish relief of pain and other desirable results.

**Vagotomy in Peptic Ulcer.**—Summers shows that the problem of peptic ulcer in general, and that of duodenal ulcer in particular, has not been solved. He believes that subtotal (partial) gastric resection is the best method of treatment for chronic gastric ulcer. Vagus nerve resection, by interrupting the cephalic (psychic) phase of gastric secretion, diminishes the acidity of the gastric secretions. This is of great importance in the human being, in whom the psychic phase predominates. Inasmuch as hyperacidity is the cause of peptic ulcer, especially of duodenal and stomal or jejunal ulceration, vagus nerve section rests on a sound physiologic basis. The clinical results reported from vagus nerve section for peptic ulcer are, for the most part, unusually favorable.

### Nebraska State Medical Journal, Lincoln

**34**:41-80 (Feb.) 1949

Newer Therapeutic Trends in Cardiovascular Disease. E. S. Orgain. —p. 45.
Surgical Treatment of Gastric Lesions. J. T. Reynolds.—p. 52.
*Management of Fractures of Os Calcis.* C. F. Ferciot and F. P. Stone. —p. 55.
Neurogenic Dysfunctions of Bladder. L. W. Lee.—p. 59.
Indications for Tracheotomy. W. P. Haney.—p. 64.

**34**:81-116 (March) 1949

Surgical Treatment of Gallbladder Disease. J. R. Reynolds.—p. 85.
Medical Aspects of Chronic Joint Disease. E. L. Persons.—p. 90.
Neurosurgical Procedures for Relief of Pain. G. L. Odom.—p. 93.
Inertia Complicating Labor. S. T. Thierstein.—p. 96.
Clinical Significance of Pneumoperitoneum with Report of 2 Gynecologic Causes. G. N. Johnson.—p. 100.
Complement Fixation Tests in Virus and Rickettsial Disease. L. O. Vose.—p. 104.

### New England Journal of Medicine, Boston

**240**:277-318 (Feb. 24) 1949

*Gastric Ulcer: Study of the Massachusetts General Hospital Cases During the Ten-Year Period 1938-1947. C. E. Welch and A. W. Allen. —p. 277.
*Pulmonary Hazard of Ingestion of Mineral Oil in Apparently Healthy Adult: Clinicoroentgenologic Study, with Report of Five Cases. L. Schneider.—p. 284.
Complications Following Paravertebral Lumbar Sympathetic Block with Nupercaine in Oil: Report of Case. J. T. Bradsher Jr.—p. 291.
Streptomycin in Therapy of Tuberculosis of Endometrium. A. Aranson and R. W. Dwight.—p. 294.
Dermatology. J. G. Downing.—p. 296.
Diffuse Embolism and Thrombosis of Pulmonary-Artery Tree, with Organization and Recanalization; Cor Pulmonale.—p. 303.
Infarction of Small Intestine, Cause Undetermined; Generalized, Severe Aortic, Slight Coronary and Mesenteric Arteriosclerosis.—p. 308.

**Gastric Ulcer.**—According to Welch and Allen, diagnosis of gastric ulcer was made in 512 patients, 379 men and 133 women, in the Massachusetts General Hospital during the period 1938 to 1947. The average age of the patients at admission to the hospital was 55; since the duration of symptoms before admission averaged five years, the average age at onset was 50, in contrast to duodenal ulcer, in which the average age at onset of symptoms is about 30. Differential diagnosis of ulcer and cancer cannot be made by present technics in about 10 per cent of the cases. From the point of view of cancer control all gastric ulcers should therefore be operated on at once. Following these principles 97 per cent of 295 patients in this series who had resections for gastric ulcer were treated correctly. The 9 patients (3 per cent) who were followed an inordinate period before resection were exactly equal in number to the deaths after resection. If medical therapy is elected (217 cases), stressing the operative mortality, the discomforts of operation and the postgastrectomy symptoms that may appear, such cases must be carefully selected, studied by the best radiologist and gastroscopist available, and followed vigilantly with early recourse to surgery if healing is not prompt. New operative technics provide satisfactory excisional surgery for ulcers of the cardia. Radical surgery for hemorrhage, the most common complication of gastric ulcer, is both safe and desirable. The authors conclude that surgical therapy is indicated in approximately 75 per cent of the patients with gastric ulcers and that excellent results are to be expected after gastric resections.

**Pulmonary Hazard of Ingestion of Mineral Oil.**—Schneider reports 5 cases of oil aspiration pneumonitis in 5 ambulatory male patients between the ages of 60 and 67 who have been habitually taking mineral oil for laxative purposes. The gravitational distribution of the lesions at the lung bases, more on the right than the left, and ultimately in both lower lung fields, and the paucity of symptoms and physical signs, at least in the early phases of this man-made disease, are emphasized. It appears clear that it takes some time for a roentgenologically evident pulmonary reaction to this bland, liquid foreign body to develop. Good nutrition, comfort and general well-being of the patient are striking in the presence of even extensive pulmonary involvement. As the pulmonary reaction to the liquid petrolatum piles up to an imposing roentgenographic appearance, the patient becomes noticeably dyspneic on exertion and a hacking cough may develop. Because of the age of these patients, if the lesion is one sided, the common error is made of calling this benign disease a malignant neoplasm and subjecting the patient to needless lobectomy or pneumonectomy. Examination of the sputum for oil droplets and an aspiration biopsy of the affected lung may be of aid in establishing the diagnosis. Early lipid pneumonia changes will ultimately resolve if the taking of mineral oil is discontinued. Three of the 5 patients were picked up on tuberculosis case-finding surveys and all 5 were seen within a two year period. Many more such cases will be discovered in older population groups if the index of suspicion of the disease remains high.

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**Aminopterin® for Leukemia in Childhood.**—Wolman and co-workers feel that the discovery of the inhibitory effect of 4-aminopteroylglutamic acid (aminopterin®) on childhood leukemia makes it more necessary than ever for the clinician to

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**Intrapericardial Foreign Bodies.**—Sandusky reports 2 soldiers, aged 19 and 26, in whom intrapericardial foreign bodies were successfully removed. In one, the foreign body was lodged in the myocardial muscle. In the other, two missiles lay within the pericardial sac adjacent to the great vessels. The author regards the following as indications for the elective removal of foreign bodies from the pericardial sac: (1) to prevent infection, (2) to prevent injury to adjacent structures, (3) to prevent neurosis. In addition, operation is indicated when a foreign body lies within the limits of the pericardial shadow on fluoroscopic examination because of the possible error in localization.

### Surgery, Gynecology and Obstetrics, Chicago

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*"Vertical Epidemic" of Mammary Carcinoma in Mice: Its Possible Implications for Problem of Cancer in General. L. Gross.—p. 295.

Submucous Lipoma of Colon. C. W. Mayo and D. F. Griess.—p. 309.

Carcinoid Tumors of Intestine. O. F. Grimes and H. G. Bell.—p. 317.

Role of Peritoneal Reflection in Prognosis of Carcinoma of Rectum and Sigmoid Colon. J. W. Kirklin, M. B. Dockerty and J. M. Waugh.—p. 326.

Carcinoma of Endometrium in Young Women. H. Speert.—p. 332.

Evaluation of Various Clinical Signs of Thrombophlebitis and Experience in Therapy with Anticoagulants. D. A. Felder.—p. 337.

Surgical Management of Ulcerative Colitis. G. G. Miller, C. B. Ripstein and E. J. Tabah.—p. 351.

Craniofacial Morphology in Cleft Palate and Cleft Lip Deformities. T. M. Graber.—p. 359.

Stability of Ac-Globulin and of Prothrombin in Citrated Human Plasma. J. L. Fahey, A. G. Ware and W. H. Seegers.—p. 370.

Pulmonary Embolism: Its Incidence, Significance and Relation to Antecedent Vein Disease. L. M. Zimmerman, D. Miller and A. N. Marshall.—p. 373.

Hemolysis During Transurethral Prostatic Resection. C. L. Biorn and L. F. Greene.—p. 389.

**Carcinoma Cells in Sputum and Bronchial Secretions.**—Woolner and McDonald examined sputum or bronchial secretions for carcinoma cells from a total of 1,600 patients. In 150 of these the results were positive. Sputum was examined while fresh or it was collected in a few cubic centimeters of 95 per cent alcohol. Five smears were made from each specimen. The smears were fixed, while wet, in equal parts of absolute alcohol and ether for thirty minutes. The staining method adopted was Harris' hematoxylin followed by dilute eosin as a counterstain. Carcinoma cells in smears could be distinguished from normal cells by numerous atypical characteristics including large size, variation in size and shape of the cells and of the nucleus, the nuclear-cytoplasmic ratio, hyperchromatism of the nucleus and the presence of large nucleoli. The appearance of carcinoma cells in sputum and bronchial secretions varies with the histologic type of tumor in the bronchus. Cancer cells originating in a bronchogenic carcinoma of small cell "oat-cell" type or in a keratinizing squamous cell type provide the most distinctive morphologic characteristics. In the more undifferentiated tumors, a diagnosis of "carcinoma cells present" was made without reference to histologic type. In 146 of the 150 cases the source of the atypical cells was believed to be a tumor in the bronchial tree. In 141 of the 146 cases a final diagnosis of carcinoma of the lung was made. In 3 cases diagnoses made on the basis of smears were proved to be false positive. In 2 cases the final diagnosis was not definitely established. Carcinoma cells in sputum or bronchial secretions provided the only preoperative microscopic evidence of cancer in 25 of a total of 58 cases in this series, in which surgical exploration was carried out. Of 24 cases of bronchogenic carcinoma in which the lesion could be removed, cancer cells in the smears provided the only microscopic evidence of cancer in 9 cases.

**"Vertical Epidemic" of Mammary Carcinoma in Mice.**—According to Gross, recent observations on mouse mammary carcinoma may fundamentally influence the approach to the problem of cancer in general. Mammary carcinoma of mice, a disease essentially similar to breast cancer of women, is caused by a filterable agent, which is transmitted from one generation to another through the milk of nursing females. This agent can be destroyed by heating to 61 degrees C. for thirty minutes; i. e., it would not resist pasteurization. The agent has antigenic properties and can be neutralized in vitro by a specific immune serum. The development of mammary carcinoma in mice can be prevented by isolating the newly born animals from their potentially cancerous mothers and by having them nursed by female mice whose milk is free from the tumor agent. A female mouse nursing her young may appear healthy while she is infecting her offspring with the tumor agent. The only indication suggesting that she discharges the tumor virus is her record showing that mammary carcinomas developed in her female ancestors. The law of obligate communicability long established for other infectious diseases appears to be valid also for breast cancer of mice. The transmission of the mammary carcinoma agent occurs only from one host to another of successive generations. The term "vertical epidemic" has been suggested for this type of transmission. Many parasites of plants and insects follow this pattern of transmission, passing from one host to another through either seeds or ova. "Vertical epidemic," however, should not be confused with inheritance; these are two fundamentally different phenomena. There is a possibility that mammary cancer of other mammals, including man, may also be caused by agents similar to that responsible for mouse mammary carcinoma. If this assumption is correct, women who have a family history of tumors should not nurse their babies; artificial feeding or feeding with pasteurized human milk should be substituted. This preventive measure may interrupt the flow of the virus and eradicate human breast cancer within one generation; breast nursing could then be resumed in later generations. It is possible that mammary carcinoma of mice is not exceptional in its etiology. Other malignant tumors may eventually prove to be caused by transmissible agents. It would then be logical to assume, however, that milk *is not the only means of transmission of such agents*; transfer through ova, and otherwise, would also have to be considered. The hypothesis is advanced that there exists a group of viruses causing various malignant tumors, which could live in close association with normal cells, and usually cause no symptoms of disease. They would be transmitted among hosts of successive generations; i. e., vertically. In most instances the carriers would never show tumors. Occasionally, however, prompted by obscure factors, the tumor virus would become activated, causing a local new growth. Because of the existence of many asymptomatic carriers, and the occasional "skipping" of generations, it would become possible to trace the host-to-host passage of the "vertically" transmitted tumor agents only when complete records are on hand covering the span of many successive generations.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

### Acta Chirurgica Scandinavica, Stockholm

**97:**189-282 (Dec. 21) 1948. **Partial Index**

Treatment of Mediastinitis from Perforation of Esophagus. A. Homb. —p. 189.
Tuberculosis of Greater Trochanter and Trochanteric Bursae. A. Ahlberg. —p. 201.
*Notes on Anatomy and Physiology of Thoracic Duct and Treatment of Injuries to It, with Reference to 3 Cases of Operation Injuries and 1 Case of Subcutaneous Rupture. L. Holmberg.—p. 215.
Vagotomy, Report on Autopsy Four Months After Operation. N. Blixenkrone-Møller and K. A. Lorentzen.—p. 234.
Metal Ions as Cause of Swelling After Local Anesthesia in Dental Practice. B. Lundqvist, N. Löfgren, H. Persson and B. Sjögren. —p. 239.
Formation of Calculi in Urinary Tract of Patients with Osteo-Articular Tuberculosis. J. Meyer and Else Mogensen.—p. 259.

**Thoracic Duct: Injuries and Their Treatment.**—Holmberg describes 3 cases in which the thoracic duct was injured in the course of operations and 1 case of subcutaneous rupture of the duct. In 2 of the cases repeated operations were necessary, in 1 case tamponade and in the other thoracotomy with ligature of the thoracic duct. In the third case, the injury was discovered at operation and the two ends of the duct were sutured. In the fourth case, the injury healed spontaneously. All these patients recovered without a continued secretion of chyle. The author reviews the anatomy of the thoracic duct, the physiology of the lymphatic vessels and the literature on the treatment of injuries to the thoracic duct. He stresses that in the event of injury to the duct or its larger afferent branches, the disturbed fluid balance should be restored, so far as possible, to normal values, which requires an energetic administration of albumin, a supply of fluid and salts (calcium, etc.) and, in the case of a protracted fistula of the lymphatic duct, the administration of vitamins. The supply of fat should be reduced to a minimum. Atropine may be tried, in order to diminish the flow of chyle. Ligature is recommended in case of injury to the cervical thoracic duct. Should it fail, tamponade can be done, which should then be left undisturbed for at least eight days. In case of injury to the intrathoracic part of the duct, an expectant procedure is recommended. Should this not produce the desired result, a ligature must be made both centrally and peripherally to the injury. As a third expedient in cases of injury to the intrathoracic part of the duct, drainage outward according to the method of Brown may be tried. This method is of palliative nature only, being intended to prevent the formation of chylothorax. Minor injuries to the thoracic duct may heal spontaneously. Owing to the advances in fluid therapy and in thoracic and cervical surgery, the prognosis of injuries to this duct is relatively favorable.

### Acta Clinica Belgica, Brussels

**3:**397-460 (Sept.-Oct.) 1948

*Roentgen Therapy of Malignant Lymphogranulomatosis. A. Herve. —p. 397.
*Derivatives of Dichlorodiethylsulfide (Yperite) in Cancerology. A. Herve. —p. 419.
Treatment of Phrenic Neuralgia. H. Durieu.—p. 440.
Practical Remarks Concerning Employment of Anticoagulants in Treatment of Acute Coronary Thrombosis. L. Jonnart.—p. 446.

**Hodkgin's Disease.**—Herve reports 125 patients, 86 male and 39 female, between the ages of 4 and 73 years with Hodgkin's disease. The highest incidence was in the age groups between 30 and 50 years. The cervical lymph nodes were involved primarily in 59 patients (48 per cent), the subclavicular lymph nodes in 27 patients (21.6 per cent) and the axillary lymph nodes in 16 patients (12.88 per cent). Secondary involvement of the lungs, mediastinum and pleura occurred in 52 patients, abdominovisceral involvement in 23, and splenomegaly in 17 patients. Local roentgen treatment is the method of choice. The zones which are involved clinically must be irradiated as soon as the diagnosis has been established. Prophylactic irradiation of lymph nodes which have not yet been affected by the disease does not delay the progressive course of the disease. Maintenance roentgen treatment in the absence of clinical manifestations is not indicated for the same reason. The average survival time between the first irradiation and the fatal outcome was 26.4 months. The average time elapsed between the onset of symptoms and the first treatment was 13.2 months. The total average survival time was 39.6 months. Twenty-three of 108 patients (20.3 per cent) were alive five years after treatment was instituted and 6 of 72 (8.3 per cent) were alive ten years after the initiation of the treatment. One patient had only one recurrence in seventeen years, and 1 patient had two recurrences in fourteen years. Local roentgen therapy is the rational palliative treatment for Hodgkin's disease, the etiologic factor of which has not yet been determined. It does not seem likely that new irradiation technics will improve the actual results of treatment, but combined treatment with roentgen rays and derivatives of dichlorodiethylsulfide (yperite) has been given a trial since January 1947.

**Dichlorodiethylsulfide Derivatives in Cancerology.**—Herve treated 31 patients, 13 with Hodgkin's disease, 5 with lymphosarcoma, 1 with myeloid and 1 with lymphoid leukemia and 11 with allied and miscellaneous disorders with methyl-bis(beta-chloroethyl)amine hydrochloride at the Anticancer Center of the University of Liége. Acute lymphogranulomatosis did not respond favorably to the nitrogen mustard therapy. This treatment is indicated in the chronic type. The general condition in chronic disease was improved, temperature dropped, pruritus subsided, the eosinophile leukocytes disappeared and adenopathies of medium degree receded rapidly. Splenomegaly and massive adenopathies were resistant. Sedation of pain occurred rapidly. Clinical periods of remission lasted from one to five months. A remission with disappearance of adenopathies was obtained in 1 patient who was resistant to roentgen rays. Tumor masses disappeared more rapidly as the result of nitrogen mustard therapy in 5 patients with lymphosarcoma than in those with Hodgkin's disease, and objective and subjective improvement seemed to last longer. One patient who was given four injections of the drug responded less favorably to the last two injections. Roentgen treatment seemed to be superior to nitrogen mustard therapy, but the latter may be used in patients who have become resistant to roentgen treatment. Nitrogen mustard therapy failed in acute leukemia but proved equal in value to roentgen treatment in chronic leukemia. Nitrogen mustard therapy should be employed in patients with lymphoid neoplasia who have become resistant to irradiation. Nitrogen mustard therapy and roentgen treatment should be combined when each of the agents alone has been found ineffective. Nitrogen mustard therapy may be useful as treatment of an attack in neoplasm with rapid growth and in generalized lymphoid disease. Nitrogen mustard therapy alone or combined with irradiation treatment appears to have a definite place in the treatment of the neoplasms discussed.

### Acta Paediatrica, Stockholm

**35:**281-372 (No. 4) 1948. **Partial Index**

Subcutaneous Administration of Amino Acids. S. Urwitz.—p. 305.
Three Fatal Cases of Probable Familial Allergy to Human Milk. H. Wergeland.—p. 312.
Simple Micro-Method for Studying Retraction of Blood Clot. M. Levander-Lindgren.—p. 335.
*Hypoprothrombinemia in Penicillin Treatment of Acute Infections in Infants. S. Axtrup.—p. 351.
Erythrocyte Turnover During Neonatal Period: Experiments with Elliptocyte Transfusions to Newborns. S. Hedenstedt and B. Vahlquist.—p. 355.

**Hypoprothrombinemia After Penicillin Treatment in Infants.**—Axtrup says that during 1947 in the Pediatric Clinic of Lund University 3 infants, all less than 6 months old, were observed who showed a fall in the prothrombin content during treatment with penicillin. Two of these infants showed a hemorrhagic tendency, which in 1 case was so severe that the hemorrhages contributed to the fatal outcome. Literature contains reports of hemorrhage as a complication in penicillin treatment. Such phenomena result mainly when the penicillin is applied intrathecally, but similar symptoms have also been noted after subcutaneous or intramuscular injection—though only when the doses were very large. It is possible that these hemorrhages may be attributed to a lowering of the prothrombin by the penicillin.

## Annales Paediatrici, Basel

### **172:**129-184 (March) 1949. Partial Index

Therapeutic Experiments with Citric Acid in Ricketts. W. Winkler. —p. 129.
*Treatment of Erythroblastosis Fetalis by Exchange Transfusion. M. Mitera, V. Kafka and J. Sedlák.—p. 155.
Evaluation of Disturbances in Ossification. L. Barta.—p. 165.
Attempts to Change Intestinal Flora of Nurslings. F. Petuely and G. Kristen.—p. 183.

**Exchange Transfusion in Erythroblastosis Fetalis.**—Mitera and associates resorted to exchange transfusions in 9 infants with icterus gravis neonatorum. Observations on these patients convinced them that this treatment is justified when the anamnesis and the serologic findings indicate erythroblastosis, even if the clinical picture is not fully developed in the newborn. Positive serologic findings are: (*a*) incompatibility of baby's and mother's Rh system; (*b*) signs of isoimmunization; i. e., Rh antibodies in mother's and baby's serum. The sooner exchange transfusion is given, the smaller is the damage caused to the organism by Rh isoimmunization and the better the results. It is essential to know the mother's serologic status during pregnancy and, if necessary, advise a premature delivery. The authors injected citrated blood into the cubital or saphenous vein and withdrew blood from the radial artery. They recommend injection of an amount of blood equaling two tenths of the baby's weight and the withdrawal of about 80 cc. less.

## Deutsche medizinische Wochenschrift, Stuttgart

### **74:**65-96 (Jan. 21) 1949. Partial Index

*Cardiac Symptoms and Vasoneurosis Resulting from Endocrine Disturbances. E. Schliephake.—p. 68.
*Chronic Subdural Hematoma. H. Meurer and G. Heberer.—p. 70.
Circulatory and Gastrointestinal Changes During Edema. W. Dalicho and E. Klotzbücher.—p. 72.
Undesirable Secondary Effects of Electroshock. W. Geller.—p. 75.
Etiology and Therapy of Elephantiasis of the Extremities. W. Junge. —p. 78.
*Indications for Use of Streptomycin in Tuberculosis. F. Böhm.—p. 80.*

**Cardiac Symptoms and Vasoneurosis Caused by Endocrine Disturbances.** — Schliephake refers to an increase in patients who complain of palpitation, vertigo, malaise and a sensation of pressure in the region of the heart. This clinical picture has been given various designations such as neurocirculatory dystonia, exertion syndrome and, in young persons, cor juvenile. These patients are often treated like those with cardiac defects, because the electrocardiographic changes are overestimated. The function of the heart muscle in these persons is not impaired; only the sympathetic innervation of the heart and of the peripheral circulation is involved. The equilibrium between the vagus and the sympathetic, or between the adrenergic and cholinergic systems, is disturbed. These disturbances in the sympathetic system are not primary but are the result of disturbances in the endocrine system. Some of the symptoms suggest adrenal disturbances, but it is impossible to say whether the primary failure is in the chromaffin system or whether it is due to a deficiency in adrenotropic or corticotropic hormones of the hypophysis. The author studied blood sugar in these patients, giving particular attention to the contrainsular hormone of the hypophysis and its behavior under the influence of short wave irradiation of the hypophysis. He found that whereas in healthy subjects short wave irradiation of the hypophysis is usually followed by a noticeable increase in the sugar content of the blood, in the patients with the aforementioned disorders the opposite tendency prevails. Impairment of the function of the hypophysis seems to play a part. The malnutrition prevailing in recent years may be responsible for the increase in these disorders. The author believes that advice against physical exertion (often given because heart disease is suspected) is not justified in these patients. On the contrary, physical activity is to be recommended.

**Chronic Subdural Hematoma.**—Meurer and Heberer discuss the clinical aspects of chronic subdural hematoma on the basis of 2 case histories. Acute subdural hemorrhages are usually the result of severe traumas, while the chronic forms are generally caused by milder trauma. Sometimes the patient does not even recall the accident. The interval between the accident and the appearance of symptoms is longer in the chronic than in the acute hematomas. Vascular anomalies, hypertension or alcoholism may be contributing factors, but this has not been definitely elucidated. Treatment consists in surgical removal of the hematoma. The authors feel that the operation recommended in 1926 by Cushing and Putnam with complete removal of the capsule of the hematoma following osteoplastic opening of the cranium is more extensive than necessary, and is employed now only when it is impossible to decide before the operation whether a subdural hematoma or a tumor exists. The parietotemporal trepanation is a less extensive, less trying, but still effective operation for the removal of the subdural hematoma. The capsule of the hematoma is not removed in this operation, but the result is nevertheless quite satisfactory.

## France Médicale, Paris

### **12:**1-28 (Feb.) 1949. Partial Index

*Latent and Atypical Tuberculosis, in Reference to a Book on Atypical Tuberculosis of Visual Apparatus. C. Déjean and J. Ferrié.—p. 3.*
Antibiotics of Vegetal and Animal Origin; Research on Antibiotic Power of Pectin and of Formic Acid. N. T. Koressios.—p. 5.
*Treatment of Pulmonary Tuberculosis with Sodium Thiosulfate, Watery Extract of Pancreas and Lipidic Extract of Spleen. J. Albert-Weil. —p. 9.

**Sodium Thiosulfate in Pulmonary Tuberculosis.**—Albert-Weil treated many patients with pulmonary tuberculosis, 12 of whom, 4 men and 8 women between the ages of 20 and 48, are reported in detail, with intravenous or subcutaneous injections of sodium thiosulfate combined with intramuscular injections of watery extract of bovine pancreas and lipid extract of spleen. Two cubic centimeters of a solution of 0.16 Gm. of sodium thiosulfate in 2 cc. of distilled water were injected daily for thirty days. At an interval of ten days a second course of these injections was given, and treatment was continued for months and even years with a total dose of 25 to 30 cg. of the drug per kilogram of body weight and six to seven courses of injections per year. At the same time repeated courses of twelve combined injections of 2 ampules of pancreas extract and of 1 to 2 ampules of lipid extract of spleen were given at intervals of ten to fifteen days. During treatment, blood cell counts, sedimentation rate tests, blood urea determinations and examinations of sputum and urine were carried out. Adjuvant treatment consisted of oral administration of vitamin D and calcium, of synthetic estrogens in certain female patients and of strict rest. The clinical picture improved rapidly, and there was progressive clearing of the pulmonary lesions seen on roentgenologic examination. It is suggested that sodium thiosulfate, an agent which regulates the ratio of glutathione in the blood and in the tissues, exerts a regulator action on the hepatic function, which plays an important part in tuberculosis. In addition, the drug has a desensitizing, antiflocculating and antianaphylactic effect. It makes Koch bacilli lose their acid resistance. The importance of prolonged treatment with divided doses of the drug and its synergy with watery extract of bovine pancreas and lipid extract of spleen are emphasized.

## Lancet, London

### **1:**291-332 (Feb. 19) 1949

Megalocytic Anemias. J. F. Wilkinson.—p. 291.
Treatment of Typhoid Carriers with Penicillin and Sulphathiazole. J. W. Bigger and R. A. Daly.—p. 296.
Maternal Rubella and Congenital Defects: Data from National Health Insurance Records. A. B. Hill and T. McL. Galloway.—p. 299.
*Congenital Absence of Gall-Bladder. M. J. Smyth.—p. 301.
*Multiple Pregnancies and Erythroblastosis Fetalis. A. Sadowsky and A. Brzezinski.—p. 303.
Lymphosarcoma Presenting as Edema of Eyelids. M. T. F. Carpendale. —p. 305.

**Congenital Absence of Gallbladder.**—According to Smyth, congenital absence of the gallbladder is a rare anomaly in man. In most cases of congenital absence of the gallbladder there is gross malformation or agenesis of the extrahepatic ducts. The large majority of children with this condition die in the first three to six months of life. The author discusses the theories that have been advanced to explain the absence of the gallbladder, reviews the clinical features that characterize complete absence of the gallbladder and cites the case of a woman, aged

72, whose symptoms were diagnosed as chronic cholecystitis. At operation the gallbladder was not found. The fossa for the gallbladder was absent, and the recognized abnormal sites for the gallbladder were explored without result, but a large stone was palpated in the common duct and removed. Twelve days after operation the bile ducts were outlined with an opaque medium introduced through the T-tube. The first picture showed dilatation of the ducts but no evidence of gallbladder or filling defect due to stone. A second radiogram, taken after the hypodermic injection of morphine showed the stimulating effect of morphine on the sphincter of Oddi, causing strong contraction and thus helping to outline the bile ducts to the full extent. The patient made a good recovery. So far as could be ascertained, this case is the first in which cholangiography was used to confirm the diagnosis at operation of congenital absence of the gallbladder. It is commonly held that when the gallbladder is removed the bile ducts dilate and take over in part the functions of the gallbladder, but it has been noted in some cases of congenital absence of the gallbladder that the ducts are not abnormally dilated. Some believe that bile ducts do not become dilated unless stones are a complication. In their opinion congenital absence of the gallbladder, or removal of the organ by operation, leads to a compensatory relaxation of the sphincter rather than dilatation of the common bile duct.

**Erythroblastosis Fetalis.**—Sadowsky and Brzezinski direct attention to the great discrepancy between the incidence of erythroblastosis fetalis and that of Rh-incompatible marriages. Insufficient maternal immunization as a result of the limitation of pregnancies has been one of the most generally accepted explanations. Thus, according to the original theory of Levine, only the second or third pregnancy in Rh-incompatible marriages can sufficiently immunize the mother to produce erythroblastosis fetalis or hemolytic disease of the newborn. To test this explanation the authors studied a group of Rh-negative women who had married Rh-positive men and had had a considerable number of pregnancies. The incidence of Rh-negative women among the obstetric material of these authors was 9.6 per cent and the incidence of erythroblastosis fetalis 0.05 per cent. The authors selected 32 Rh-negative women who were married to Rh-positive men and had had 6 to 14 pregnancies and at least 6 deliveries at term. Their blood was repeatedly examined for agglutinating, blocking and conglutinating Rh antibodies before, during and after the last pregnancy, and in some cases before, during and after the last two pregnancies. A group of 34 Rh-positive women who had 6 to 14 pregnancies were used as controls. The authors found that repeated incompatible pregnancies (6 to 14) are in themselves insufficient to cause maternal immunization. This seems to invalidate the view that hemolytic disease of the newborn is a relatively rare condition because of the limitation of the number of pregnancies in Rh-negative women married to Rh-positive men.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

### 93:237-312 (Jan. 22) 1949. Partial Index

*Vitamins in Treatment of Toxicosis of Pregnancy. A. Bijdendijk and F. J. J. van Assen.—p. 243.
Acrodynia in Poisoning with Mercurous Chloride. S. van Creveld and M. M. P. Paulssen.—p. 249.
Treatment of Ventricular Paroxysmal Tachycardia. H. A. P. Hartog and J. E. van Beynum.—p. 256.

**Vitamins in Treatment of Pregnancy Toxemias.**—Bijdendijk and van Assen resorted to the use of vitamin E in women with toxemia of pregnancy, because it has a favorable influence on hyperestrinism. Vitamin B complex was administered, because it promotes the detoxication of estradiol in the liver. Observations on the first patient suggested that the favorable effect of these vitamins on the toxemia of pregnancy is due chiefly to vitamin E and that the vitamin B complex has a supporting effect. The authors cite 5 patients who were treated with these vitamins and in whom pregnancy toxicosis was influenced so favorably that the pregnancy could be carried to a favorable termination without a salt-free diet.

## Nordisk Medicin, Stockholm

### 41:55-102 (Jan. 14) 1949. Partial Index

Biologically Active Iron Compounds. Review. H. Theorell.—p. 55.
Diagnosis and Therapy in Heterochylia and Achylia. H. Öhnell.—p. 63.
Tissue Reaction ("Foreign Body Reaction") to Mucus and Urine. H. Hamperl.—p. 66.
*Leiomyosarcomas in Stomach and Intestine. B. Fretheim.—p. 69.

**Leiomyosarcomas in Stomach and Intestine.**—Fretheim states that leiomyomas constitute 1 per cent of the neoplasms in the gastrointestinal tract. They occur most often in the stomach and small intestine and are to be considered potentially malignant. Their localization is in the submucosa or subserosa or both. They are characterized by slow growth over a period of years, tendency to necrosis and late development of metastases. The chief symptom is usually a sudden severe melena. Leiomyomas with subserous localization give symptoms more by their size and location. Treatment consists in radical removal. Roentgen treatment is of doubtful value. Preoperative diagnosis is often possible. Three cases of leiomyosarcoma, 2 in the stomach, 1 in jejunum, and 1 case of leiomyoma in jejunum are described. In the 3 cases with sudden marked melena without preceding dyspepsia, ulceration or signs that there had been ulceration on the mucosal side of the tumor were seen; no signs of metastases appeared although the tumor had apparently existed for eight years in the first case and for thirteen in the third, in which signs of spontaneous recovery were seen; no signs of metastases appeared, although the tumor The first case showed the advisability of radical resection ot the stomach or total gastrectomy in the case of such tumors, as there was recurrence after five years.

## Prensa Médica Argentina, Buenos Aires

### 36:119-160 (Jan. 21) 1949. Partial Index

*Pachyperiosteoderma (Pachyderma with Sulci with Hypertrophic Pachyperiosteosis of Long Bones). Its Finding in Bronchopulmonary Cancer. M. R. Castex, E. G. Mazzei and F. Schaposnik.—p. 119.

**Pachyperiosteoderma in Bronchopulmonary Cancer.**—According to Castex and collaborators pachyperiosteoderma is a rare condition affecting adults of either sex between the ages of 20 and 40 years. The condition has an insidious onset and a slow course. The changes in the skin are those of pachyderma with fissures. The expression of the patient's face and the appearance of his legs and hands are those of an elderly leper. The changes in the bones are of the acromegalic type. The condition may be associated with bronchopulmonary cancer. The authors report a case of this type in a man 46 years of age, and cite a similar instance from literature in a woman 61 years of age. The authors' patient presented cough, fever, fatigue, chills, frequent perspiration and loss of weight. He complained about articular pain. Roentgen examination showed enlargement of the bones, which was particularly striking at the ankles and the wrists. Roentgen examinations of the thorax showed a dark round shadow in the upper field of the left lung, the size of which rapidly increased. Cachexia, asthenia and arterial hypotension characterized the final stage of the disease, which lasted three years.

## Revista de Tuberculosis del Uruguay, Montevideo

### 16:141-200 (Sept.) 1948. Partial Index

*Therapy of Tuberculosis of Lower Lobes of Lung. A. Trenchi and W. García Fontes.—p. 154.
Treatment of Various Types of Tuberculous Empyema. J. A. Sciuto.—p. 192.

**Treatment of Tuberculosis of Lower Lobes of Lung.**—Trenchi and Garcia Fontes state that tuberculosis of the lower lobes of the lung has a tendency to early formation of cavities and to spread to the lower lobe of the contralateral lung. In patients with clinical symptoms and roentgen signs of tuberculosis of the lower lobes and a persistent negative search for tubercle bacilli, differential diagnosis should consider bronchiectasis, a residual cavity of either acute abscess or a basal hydatid cyst, cancer of the lung and chronic pneumonitis. In patients with clinical symptoms, roentgen signs of tuberculosis of the lower lobes and positive sputum, collapse therapy is indicated provided bronchial endoscopy does not reveal bronchial or tracheobronchial tuberculosis. The authors report 7 cases of tuberculosis of lower lobe among 509 cases of pulmonary tuberculosis observed in a pavilion for male tuberculous patients. The cavities were either elastic or semirigid and of a moderate size. They were located either at the apex of the lower lobe or at the posterior basal segment. Initial artificial pneumothorax obliterates the cavities at the aforementioned locations. Failure of artificial pneumothorax is an indication for phrenic paralysis if the cavity is located at any of the segments of the lower lobes of the lungs, with the exception of the posterior basal segment. Cavities at the posterior basal segment are best treated by a lobectomy or the removal of the corresponding bronchopulmonary segment. In some cavities of the lower lobe phrenicectomy followed by pneumoperitoneum gives good results. Giant, fibrous and rigid cavities at any of the segments of the lower lobes constitute surgical problems as yet unsolved.

## Sang, Paris

### 19:521-616 (No. 8) 1948. Partial Index

Chronic Interstitial Inflammation of Bone Marrow (Myelitis Chronica Interstitialis). K. Rohr.—p. 521.

Syndrome of Irritation of Bone Marrow and Its Progressive Course Toward Aplasia. P. Cazal.—p. 527.

*Exsanguination Transfusions in Leukemias; Attempt of Application to Chronic Myeloid Leukemias. P. Croizat, L. Revol and P. Morel. —p. 532.

Maturation of Reticulocytes. Ruth Plum.—p. 540.

Clinical and Experimental Research on Mechanism of Action of Urethane. S. Moeschlin.—p. 543.

*Value of Urethane in Treatment of Leukemias and Other Hemopathies. Two Years of Clinical and Hematologic Experience. E. Storti. —p. 549.

**Exsanguination Transfusions in Leukemias.**—Croizat and his co-workers treated 2 patients, 1 man aged 49 and 1 girl aged 15, who had myeloid leukemia, with exsanguination transfusions. The male patient had been treated for six years with roentgen irradiation of the spleen, but this method had become ineffective. Urethane failed likewise. Examination of the blood revealed 2,240,000 red blood corpuscles and 524,000 white blood corpuscles with a formula typical for myeloid leukemia. Four exsanguination transfusions were given within twenty days; the patient received 22.5 liters of blood, while 19.5 liters were withdrawn. Myeloid leukemia in the female patient had been diagnosed only recently. Ten million units of penicillin was given because hereditary syphilis was suspected, but this treatment was ineffective. Blood count revealed 3,820,000 red blood corpuscles and 75,000 white blood corpuscles with a formula typical for myeloid leukemia. Two exsanguination transfusions were given within eight days; the patient received 8.5 liters of blood, while 7.3 liters were withdrawn. The exsanguination transfusions were well tolerated by the patients. In both patients there was a pronounced increase in the number of red blood corpuscles while the number of the white blood corpuscles was diminished; both the young and the adult granular forms of the leukocytes were reduced in number; in both patients the myeloblasts disappeared almost completely. There was first a rise in the leukocyte count and only several hours after the transfusion there appeared a progressive diminution of the leukocytes and particularly of the young types. A true lavage of the bone marrow and of the hemopoietic organs during the first stage may be followed by a specific "antileukosis" during the second stage. Considerable reduction of the volume of the spleen in both patients favors this concept.

**Urethane in Leukemias and Other Hemopathies.**—Storti treated 42 patients, 18 with chronic myeloid leukemia, 4 with lymphatic leukemia, 6 with acute leukemia, 6 with lymphogranulomatosis, 2 with lymphosarcomatosis, 1 with polyglobulism of the Vaquez type and 5 with malignant tumors of various organs, with urethane; 4 normal persons served as controls. The majority of these cases were followed up for two years. Chronic myeloid leukemia is most sensitive to urethane, while lymphatic leukemia is less sensitive; acute leukemia is not influenced by urethane but may be improved by combined treatment with urethane, penicillin and transfusions. The reaction to urethane was less rapid in patients with myeloid leukemia of two years' duration who had received irradiation treatment previously. The splenomegaly of patients with chronic myelosis of four years' duration which had become resistant to roentgen ray treatment receded after the administration of urethane combined with transfusions, but fatal acute leukemia resulted after six months of treatment. Several patients with chronic myelosis who had been treated satisfactorily with urethane showed a noteworthy sensitivity to the action of roentgen rays several months after urethane was discontinued. Urethane should be employed first in all cases of myelosis or chronic lymphadenosis which have not yet been treated by any other method. Treatment with urethane should be instituted with doses of 3 to 4 Gm. daily by mouth and should be continued for long periods after normalization of the blood picture had been achieved, with doses of 2 Gm. daily and with hematologic control every two weeks. It is suggested that urethane acts as an inhibitor of the enzymatic cellular activity. In lymphogranulomatosis the masses of granulation tissue were reduced considerably in volume and in consistency as a result of the treatment with urethane; combined treatment with urethane and weak irradiation at long intervals deserves further trial. In patients with lymphosarcoma the volume of the masses in the lymph nodes was reduced with urethane treatment but the progressive course of the disease continued. Urethane was ineffective in polycythemia.

## Semaine des Hôpitaux de Paris

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Audio-Electroencephalography and Pentothal Sodium. J. Calvet, F. A. Birague and C. Grèzes-Rueff.—p. 709.

New Achievements in Treatment of Cancer of Rectum. J. Ducuing. —p. 710.

Arterial Hypertension and Its Surgical Treatment (Apart from Hypertension Nephritis). Riser.—p. 714.

*Parallel Sclerosis of Heart and Lung. R. Roques, R. Bollinelli, Parayre, Arlet and Calazel.—p. 721.

*Part Played by Lipocaic Insufficiency in Diabetes in Juvenile Persons. M. Sendrail and A. Bazex.—p. 730.

**Parallel Sclerosis of Heart and Lung.**—Roques and co-workers report 35 patients, 32 men and 3 women, between the ages of 42 and 76, with simultaneous sclerosis of the heart and the lungs. This condition has a predilection for persons over 50. It constitutes in the aged a common feature of cardiopulmonary failure which can be differentiated from pulmonary sclerosis with cardiac involvement and from cardioaortic sclerosis with pulmonary complications. Two phases of the simultaneous sclerosis of the heart and the lungs may be distinguished: The first is characterized by the independent involvement either of the heart or of the lungs. The cardiac lesions are of a vascular nature, while the pulmonary lesions are those of emphysema, apical sclerosis and bronchitis. The second phase is that of visceral interreaction in the course of which cardiac decompensation with predominantly right ventricular failure dominates the clinical picture. In this stage only a thorough analysis of the symptoms will make it possible to ascertain which is primarily pulmonary and which is primarily cardiac. In the majority of the cases death resulted from bronchopneumonia with an infected infarct as the main pathologic factor.

**Lipocaic Insufficiency in Juvenile Diabetes.**—Sendrail and Bazex report 4 boys between the ages of 10 and 19 years and 4 girls between the ages of 2 and 20 years with severe diabetes mellitus of insular type preceding the other symptoms of their syndrome, which consisted of infantilism and nanism, a disturbance of the distribution of fat, hepatomegaly and hyperlipoidemia (Mauriac's syndrome). The pathogenesis was confined to a diabetic lipoidosis. Mauriac's syndrome may be interpreted on the basis of a double functional incompetence of the islands of Langerhans, that concerned with regulation of glycogen storage and regulation of lipids, rather than by assuming a failure of the function of the anterior lobe of the pituitary. The occurrence of lipid hepatitis depends on multiple lipotropic factors, the most active of which is Dragstedt's lipocaic hormone. The lipocaic deficiency may be responsible for the complex of symptoms which characterize the syndrome of Mauriac. Juvenile diabetes appears to combine two groups of manifestations, those due to insulin deficiency and those due to lipocaic deficiency.

# Book Notices

**Office Gynecology.** By J. P. Greenhill, B.S., M.D., F.A.C.S., Attending Obstetrician and Gynecologist, Michael Reese Hospital, Chicago. Fifth edition. Cloth. Price, $5.25. Pp. 461; with 120 illustrations. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1948.

In the fifth edition of this useful office manual, the author has made it even more inclusive as a guide for this important branch of gynecologic practice. The book has always been admirably adapted for both the general practitioner and the specialist.

One questions the advisability of many physicians doing some of the more complex procedures in the office, such as sterilization by coagulation of the uterine cornu. The description of local anesthesia for dilatation and curettage also hints that this is an office procedure, which indeed it can be, but should not be frequently, nor should it be done there by many physicians.

Space allotted to older office practices, such as the use of pessaries, douches and pelvic heating, is reduced somewhat, and properly so. However, these portions of the book remain adequate and are most practical.

The chapters on endocrinology and menstrual irregularities are both factual and good. A table of commercial endocrine products will be found in this section and should be useful for occasional reference. The book ends with a chapter that provides excellent information and advice as to the premarital conference and examination—presented in good taste.

The book is remarkable for being so inclusive of nearly every type of office gynecologic procedure. Revision is up to date. As stated in the review of the first edition, it is an authoritative and complete office tool for the physician treating gynecologic patients for the less serious, but often annoying, conditions that can properly be handled in the office by either the general practitioner or the gynecologist.

**Pain Syndromes: Treatment by Paravertebral Nerve Block.** By Bernard Judovich, B.S., M.D., Physician in Charge, Neuralgia Clinic, Graduate Hospital, Philadelphia, and William Bates, B.S., M.D., F.A.C.S., Professor of Surgery, Graduate School of Medicine, University of Pennsylvania, Philadelphia. Foreword by Joseph C. Yaskin, M.D., Professor of Neurology, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa. Third edition [of Segmental Neuralgia in Painful Syndromes.] Cloth. Price, $6. Pp. 357, with 181 illustrations. F. A. Davis Company, 1914-16 Cherry St., Philadelphia 3, 1949.

The authors show that, clinically, the interpretation of pain can be greatly facilitated by eliciting hyperalgesic or tender skin zones which accompany pain. The presence of tenderness, and its distribution, whether local or segmental, have been of great aid in diagnosis and therapy.

The work is based on the fact that, clinically, the combination of segmental pain and tenderness usually appears to be due to factors which irritate roots, ganglia or trunks of the spinal sensory nerves, and not due to painful impulses originating in diseased viscera. The authors believe that pain and segmental tenderness of skin in most instances appear to be of somatic origin rather than of visceral origin.

Segmental pain and tenderness is a symptom complex due to toxic absorption, poor posture, trauma, arthritis of the spine, malignant metastases and other contributing factors. The syndrome has no specific origin.

Much attention is given to the abdominal wall neuralgias and other conditions often mistaken for visceral organic disease. The authors stress the clinical value of tenderness and devote much space to therapy, especially the technic of nerve infiltration, which has yielded the most satisfactory relief of pain.

The chapter dealing with brachial plexus pain has been enlarged by the inclusion of a new summary of etiologic factors and a new outline of diagnostic procedures.

The problem of the anterior scalene syndrome is approached by reevaluation of signs and symptoms. Factors are suggested which the authors believe are responsible for failure to obtain relief of pain following scaleniotomy. A method of clinical examination is described to help avoid surgical failures. Conditions which simulate an anterior scalene syndrome are discussed. Distinguishing symptoms and signs of primary and reflex scalene syndromes have done much to help in understanding some of the puzzling pain problems affecting neck, shoulder and upper extremity.

Endometriosis is discussed as a cause of major backache. The intravenous use of procaine as a method of pain control is presented with a mode of action, indications and technic of administration. The technic is given for aborting attacks of migraine in selected cases. A new chapter on atypical facial pain has been added.

**Public Health in the World Today.** Edited by James Stevens Simmons, Dean, Harvard School of Public Health, Cambridge, Mass. Assistant Editor: Irene M. Kinsey. With a foreword by James Bryant Conant, President of Harvard University. Cloth. Price, $5. Pp. 332, with 17 illustrations. Harvard University Press, Cambridge 38, Mass., 1949.

Man, following wars, usually takes a heightened interest in the health of his fellow man. In 1947 and 1948 the Harvard School of Public Health presented twenty-four guest speakers on public health and related subjects. The speeches are divided into four successive subjects: (1) The Profession of Public Health; (2) Public Health in the United States Today; (3) Public Health Programs and Problems Abroad, and (4) Public Health in a New Era.

The history of medicine and nutrition is traced to the present. Although the role of the doctor as leader is undeniable, much of the problem today is outside his domain—in the fields of education, economics and sociology.

The second section, tracing the history of the public health service in the United States since 1798, shows vast organizations at work. The needs are summarized as education of the public, further development of the new field of industrial medicine and surgery, and more psychiatric help. Abroad, the picture is less encouraging. Although the World Health Organization of the United Nations is actively campaigning, without political discrimination, to improve the social and economic as well as the medical well-being of the people, the group does not allot all problems to one agency. Although the war has left Europe with many health problems, the Far East is even more disease ridden and malnourished. In the tropics, the past fifty years have been marked by the advent of tropical medicine and public health programs, but much work is still necessary.

The last section, "Public Health in a New Era," faces squarely the situation in public health today. Formerly serious problems of acute respiratory infections have been brought largely under control, and the diseases of childhood have been similarly replaced by the diseases of old age as the major killers. Of the ten leading causes of death, only premature birth is associated with early life. Heading the list are heart disease and cancer. The public health worker fights these by educating the public to recognize symptoms, by administering tests to locate sufferers and by helping the elderly make the mental adjustments.

Another problem of great importance today has been created by the extensive development of travel. Safety, disease control, sanitation and environmental hazards (especially in aviation) now call for rigid inspection and control.

The advent of the atomic era has introduced still another hazard: radiation exposure. Protection against this danger has led to the development of an entirely new field, called health physics. One of the more important jobs in this work is keeping contact with radiation at a minimum through careful disposal of waste.

As a survey of public health these articles set forth the weaknesses in this phase of social progress which can be corrected if all will work to eliminate them. All weaknesses cannot be listed, but several stand out: 1. Although we have the information to wipe out such scourges as smallpox within a year by universal vaccination or appropriate treatment, preventive medicine has lagged behind in the application of its knowledge. No great disease has actually been banished from the earth by preventive medicine. 2. We have not met the environmental changes which continue to create public health problems. 3. We need well trained and equipped health units, more dentists, more psychiatrists and available psychiatric aid and more research into the diseases of old age. 4. To further these steps and the health of the individual, the public must be educated to the needs of, and the solutions to, the problems.

Public health workers hope through the World Health Organization an almost singular example of international cooperation in sharing of knowledge, personnel and equipment, to see at last a world united.

**Handbook of Midwifery.** By Marageret Puxon, M.D., M.R.C.O.G., Obstetric Consultant, Essex County Council, Essex, England. Cloth. Price, 25s. Pp. 326. Sylviro Publications, Ltd., 19 Welbeck Street, London, W.1, 1949.

This handbook is well written and covers the subject adequately. Evidently, English physicians need such a work, for the author states, "Unfortunately, the increase in antenatal care in this country has so far tended towards excessive interference, so that the stillbirth and neonatal rates remain high, in contrast to the remarkable improvement in maternal mortality in recent years."

The author stresses the use of analgesia in the first stage of labor, especially the use of meperidine hydrochloride in 100 mg. doses. After delivery, leg exercises are begun on the second day. Early rising is not recommended except in patients who have not had perineal repairs. A fourteen day stay in the hospital is recommended.

The chapter on the Rh factor in obstetrics is particularly well written, stating the known facts in an orderly fashion. The advice not to employ version in occipitoposterior positions is open to argument, especially when it is advised for face presentations. Throughout the book the author warns the physician to be on the lookout for shock and postpartum hemorrhage.

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The chapter on the treatment of immediate partum hemorrhage recommends the hot douche for its control. Also the use of ergonovine maleate injected directly into the uterus through the abdominal wall is stressed, and packing the uterus is recommended as a last resort.

This book is recommended to those who wish a quick résumé as an aid in the care of the obstetric patient.

**Die beiderseitige Nierensteinkrankheit.** Von Dozent Dr. Bertrand Bibus. Band III, Wiener Beiträge zur Urologie. Herausgegeben von Prof. Dr. Richard Übelhör. Boards. Price, $6. Pp. 169, with 40 illustrations. Wilhelm Maudrich, Spitalgasse 1B, Wien IX/2; imported by Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1948.

This small book devoted to a discussion of bilaterally occurring renal calculi is well prepared. Other monographs in the series are by Drs. Hutter, Glingar and Hyrutschak, all well known contributors to urologic literature, and these monographs are edited by Prof. Lorenz Übelhör. This volume is divided into three parts. First there is a general discussion of the subject, under which etiology, chemistry, course of the disease and its complications, its association with other complicating diseases of the kidneys and roentgen diagnosis are thoroughly considered. The second part is devoted to conservative or nonoperative treatment and the third part to operative therapy. The usual important divisions are made, and there are nine pages devoted to stone in a solitary kidney. Bibus states as definite indications for surgical attack on a stone-bearing solitary kidney: First, colic and hematuria of such degree and so harmful to the patient that the risk of operation is of secondary consequence. Second, recurrent anuria due to stone in an uninfected kidney, even if the immediate anuria can be overcome by ureteral catheterization. He correctly states that repeated instrumentation usually leads to infection and the patient is thereby subjected to added danger. Third, not only the actual complete obstruction produced by a stone in a solitary kidney, but the apparent likelihood or imminence of such a complication. Fourth, acute onset of infection of the kidney or in the perirenal tissues. Fifth, acute anuria produced by stone. As his sixth indication, he says that the decision to operate on a person in a chronic suburemic state is a difficult one, and he elaborates on the age and general status of the patient as being of great importance in the final decision.

Under general considerations of operative technic, he conforms with generally accepted procedures. For example, he does not favor pyelostomy as against nephrostomy, because of the danger of persistent urinary fistula. If for any reason the pelvis of the kidney is to be opened, he recommends the insertion of drainage retrograde from parenchyma to pelvis; but in instances when the pelvis of the kidney is not to be or cannot readily be opened, as in intrarenal pelvis, he favors the small nephrostomy without complete mobilization of the kidney. This technic has the advantage of a smaller skin incision and in general is less traumatic to the patient. This reviewer has seen this operation a number of times and has never been convinced that the drainage, whether by Pezzar catheter or other means, has been accurately placed, and has never used this technic, although well qualified surgeons in this country use it.

In discussion of pyelotomy or nephrotomy he naturally recommends the former whenever possible.. Where both are required, when possible the combined incisions should be low so that drainage from the kidney will be to the best advantage. Heminephrectomy and resection of a calyx are looked on as they are in this country.

In general, this monograph is well worth reading if one is thoroughly familiar with German medical style and language. The use of words and the style are rather involved and heavy. The forty illustrations are instructive, especially the roentgenograms.

**The Driving Forces of Human Nature and Their Adjustment: An Introduction to the Psychology and Psychopathology of Emotional Behavior and Volitional Control.** By Dom Thomas Verner Moore, Ph.D., M.D. Fabrikoid. Price, $6.50. Pp. 461, with 26 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1948.

Dom Thomas Verner Moore is known for his scholarly productions in psychopathology. Moore has an intense interest in vector analysis, which is a statistical procedure used in psychology to determine constellations of traits or syndromes which are found in certain spheres of abnormal psychology. Most of these syndromes represent clinical syndromes, but are defined in new terms. Nevertheless their identification from the description of single traits with the current terminology is not difficult. One must remember too that Father Moore is known for an effective dilution of freudian psychology. In the present volume he has adequately and acceptably gone through the narrow channel between the Scylla of the Catholic Church's attitude at that time toward psychonalysis and the Charybdis of orthodox freudian psychology. The present volume is a complete clinical survey of the application of his own beliefs toward the psychoneuroses, their development and expression with some emphasis on the psychosomatic aspect of the psychoneuroses and with some discussion of child guidance.

If one has sufficient background to evaluate the deviations of Moore's thinking from accepted psychiatric thought, the book should be a valuable asset in developing his thinking in terms of breadth. One must hesitate to recommend this volume as material for a beginner in the field of psychopathology.

**Toxoplasmosis: A Clinical, Serological and Histopathological Study with Special Reference to the Eye Manifestations. Presentation of Twenty Cases of Proved or Presumable Toxoplasmic Retinopathy and Retino-Encephalopathy with Associated Ocular Manifestations.** By Dr. C. D. Binkhorst. Cloth. Price, $3.75. Pp. 163, with 20 illustrations. H. E. Stenfert Kroese's Uitgevers-Mij N.V., Leiden, Netherlands, 1948.

This monograph on toxoplasmosis covers the field mentioned in the long title. It gives a comprehensive review of the existent knowledge of the subject divided into the usual scheme of epidemiology, immunology, histopathology, clinical aspects, diagnosis and treatment. Sulfonamide compounds have slight therapeutic effect in experimentally infected animals; penicillin has no effect, and streptomycin and chloramphenicol apparently have not yet been tested. There is a brief summary of the 49 cases thus far reported, including 20 of the author's, with detailed discussion of ocular changes.

The serologic studies reported are not reliable, being based on old technic which has since been improved. The clinical and pathologic descriptions and the illustrations are excellent. Here and there are slight deviations from conventional English, indicating foreign authorship, which adds a degree of charm to the opus.

# Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

## ISOLATION PERIODS IN COMMUNICABLE DISEASE

*To the Editor:*—What is the latest information on length of quarantine for measles, mumps, chickenpox, whooping cough, scarlet fever and diphtheria? What are the reasons for changing the old periods of quarantine?

M.D., Ohio.

Answer.—Rigid quarantine regulations are seldom required for the diseases mentioned. However, customary isolation periods are as follows: (1) measles, from the onset of illness until the rash has disappeared; in uncomplicated cases this generally means about ten days; (2) mumps, until all swelling of the parotid glands has subsided, or eight days from the onset of illness; (3) chickenpox, fourteen days, or until the body is free of all crusts; however, the American Public Health Association has expressed the opinion that varicella is not contagious six days after the appearance of the first lesions, regardless of any crusts that may persist; (4) whooping cough, until three weeks after the beginning of the paroxysmal stage; (5) scarlet fever, a minimum period of fourteen days, but a continuation of isolation if there are abnormal discharges; if the latter persist, until forty-five days, when negative nose and throat cultures for hemolytic streptococci should be secured before the patient is released; (6) diphtheria, minimum, seven days, or at any time after that when two successive cultures from nose and throat, taken not less than twenty-four hours apart, are negative for diphtheria bacilli.

Isolation periods are not the same in all states, and consequently the information supplied may be in conformity with public health regulations in one locality but not in another. For some years the American Public Health Association has worked for uniform requirements throughout the country. Changes in isolation periods which are adopted from time to time are based on scientific progress concerning the nature of the acute infectious diseases.

## DIAPHRAGMATIC HERNIA IN PREGNANCY

*To the Editor:*—A young woman has a diaphragmatic hernia (discovered on a physical examination for entering nurses' training). She passed the physical examination satisfactorily, but roentgen rays showed the hernia. She has been advised to have the hernia repaired before getting pregnant.

W. A. Dean, M.D., Tulsa, Okla.

Answer.—There are several factors involved in this problem. One wonders how this hernia was picked up by "routine" roentgen examination unless either the patient complained of symptoms or the hernia was extensive enough to show by flat plate. These hernias are frequently missed by so-called routine studies and are sometimes difficult to demonstrate with barium examination.

If the hernia is asymptomatic or merely a defect in the diaphragm then it probably is of only academic interest and the patient should merely be informed of its presence in case of future trouble.

If the hernia is symptomatic or abdominal viscera are present in the chest cavity then the hernia should be repaired now.

The only effect of pregnancy would be to increase the intra-abdominal pressure and the relaxation of the abdominal wall frequently takes care of this. If the hernia causes symptoms during pregnancy, it can be repaired then.

## USE OF LIVER PREPARATIONS

*To the Editor:*—Please furnish information about the proper use of liver extracts parenterally. It is not uncommon to see patients treated for hypochromic anemia with U. S. P. 15 unit liver extract solution. The detail men tell me that I am doing wrong by using crude liver extract in such cases! Recently when asking for a ½ unit crude liver extract I was told to take a two unit liver, dilute it four fold and use it!

Anthony M. Susinno, M.D., Palisades Park, N. J.

Answer.—Crude extracts of liver are still considered by some authorities to be superior to highly refined preparations for the treatment of spinal cord changes incident to addisonian pernicious anemia. Because it was considered likely that too highly refined and concentrated extracts for injection might omit some, as yet unknown, important principle which may form a part of what is called the antipernicious anemia factor, the U. S. Pharmacopeia Anti-Anemia Preparations Advisory Board has limited the concentration of parenteral liver extract to a maximum of 15 U. S. P. injectable units per cubic centimeter of the finished solution. Most pharmaceutical manufacturers prepare other lesser concentrations of liver extract by dilution of a more concentrated preparation, so that a solution for injection labeled to contain 2 U. S. P. injectable units does not necessarily represent a more "crude" preparation as implied by the lesser concentration. The U. S. Pharmacopeia, however, provides for crude preparations having not more than 2 U. S. P. injectable units per cubic centimeter that are permitted to be labeled as liver injection (crude) when prepared, so that the final product is directly derived from a solution having an alcohol concentration not higher than 70 per cent by volume. Crude extracts labeled as such are usually not available in concentration less than 1 U. S. P. injectable unit per cubic centimeter. Undiluted extracts are thus distinguished from diluted products of the same concentration by the label designation indicated.

The choice between "crude" and "refined" products for the treatment or prevention of neurologic complications of pernicious anemia is still the subject of some controversy, but it is now usually conceded that all extracts which conform to U. S. P. requirements are approximately equal in their ability to prevent or reverse these manifestations of the disease. The diluted preparations should not therefore be viewed so much in the light of inferiority as from the standpoint of suitable concentration to permit adequate maintenance dosage. This should provide not less than the equivalent of 1 U. S. P. unit (oral or injectable, depending on the mode of administration of the product) daily. The minimum recommended dosage can be given as 15 U. S. P. units twice a month with less inconvenience than with lesser doses at shorter intervals, once the disease is brought under control.

Liver extract is ordinarily indicated for treatment of hyperchromic macrocytic anemia rather than for hypochromic microcytic anemia.

## LICHEN PLANUS

*To the Editor:*—A male patient aged 59 is suffering with lichen planus distributed over the entire body, including all extremities, since July 1948. Despite adequate treatment with bismuth compound, and iron, and roentgen therapy, the eruption has progressed with short remissions. The patient has considerable pruritus. Can you suggest anything that might benefit this patient?

Joseph Burns, M.D., Miami Beach, Fla.

Answer.—The use of calciferol (vitamin $D_2$) has recently been recommended for the treatment of lichen planus, but experience with it is still limited. The dosage presumably is the same as for lupus vulgaris; i. e., 50,000 units two or three times daily. The calcium level of the blood serum must be checked at frequent intervals. Most physicians still rely on a combination of rest and relaxation, both mental and physical; the use of heavy metals, as bismuth, mercury or arsenic, and sometimes liver extract. Bismuth sodium triglycollamate, an oral preparation of bismuth, one to two tablets three times a day for four to six weeks, has some enthusiastic advocates. In addition, it is well for the patient to use antipruritic lotions or ointments.

## INSTABILITY IN DIABETES

*To the Editor:*—A woman, aged 34, has been under treatment for diabetes for twenty-four years. At the present time she takes 40 units of globin insulin in the morning and is on a 1,600 calory diet. She is sugar free before breakfast. Before the noon meal her sugar varies from none to 3 or 4 plus. On alternate afternoons she will be sugar free with many episodes of hypoglycemia coming on between four and six o'clock in the evening. Other afternoons the sugar content runs from 1 to 4 plus. An internist she has consulted maintains that she should keep herself sugar free at all times. Her health is otherwise good, and even when hospitalized she reacts the same way. Can you offer suggestions as to the management of this case?

H. V. Temple, M.D., Moab, Utah.

Answer.—In occasional cases complete control of glycosuria is obtainable only at the risk of episodes of hypoglycemia, and in such cases it sometimes is desirable to permit some glycosuria, especially at noon and in the evening, provided always that morning urine is sugar free. When globin insulin is used it sometimes is desirable to give a dose of regular insulin in the morning and inject the globin insulin at noon. The action of globin insulin in most cases is shorter than twenty-four hours, and by the procedure suggested quick action is obtained in the morning when it is needed most and the dose of globin insulin given can be smaller. In the case described I suggest a

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This book is recommended to those who wish a quick résumé as an aid in the care of the obstetric patient.

**Die beiderseitige Nierensteinkrankheit.** Von Dozent Dr. Bertrand Bibus. Band III, Wiener Beiträge zur Urologie. Herausgegeben von Prof. Dr. Richard Übelhör. Boards. Price, $6. Pp. 169, with 40 illustrations. Wilhelm Maudrich, Spitalgasse 1B, Wien IX/2; imported by Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1948.

This small book devoted to a discussion of bilaterally occurring renal calculi is well prepared. Other monographs in the series are by Drs. Hutter, Glingar and Hyrutschak, all well known contributors to urologic literature, and these monographs are edited by Prof. Lorenz Übelhör. This volume is divided into three parts. First there is a general discussion of the subject, under which etiology, chemistry, course of the disease and its complications, its association with other complicating diseases of the kidneys and roentgen diagnosis are thoroughly considered. The second part is devoted to conservative or nonoperative treatment and the third part to operative therapy. The usual important divisions are made, and there are nine pages devoted to stone in a solitary kidney. Bibus states as definite indications for surgical attack on a stone-bearing solitary kidney: First, colic and hematuria of such degree and so harmful to the patient that the risk of operation is of secondary consequence. Second, recurrent anuria due to stone in an uninfected kidney, even if the immediate anuria can be overcome by ureteral catheterization. He correctly states that repeated instrumentation usually leads to infection and the patient is thereby subjected to added danger. Third, not only the actual complete obstruction produced by a stone in a solitary kidney, but the apparent likelihood or imminence of such a complication. Fourth, acute onset of infection of the kidney or in the perirenal tissues. Fifth, acute anuria produced by stone. As his sixth indication, he says that the decision to operate on a person in a chronic suburemic state is a difficult one, and he elaborates on the age and general status of the patient as being of great importance in the final decision.

Under general considerations of operative technic, he conforms with generally accepted procedures. For example, he does not favor pyelostomy as against nephrostomy, because of the danger of persistent urinary fistula. If for any reason the pelvis of the kidney is to be opened, he recommends the insertion of drainage retrograde from parenchyma to pelvis; but in instances when the pelvis of the kidney is not to be or cannot readily be opened, as in intrarenal pelvis, he favors the small nephrostomy without complete mobilization of the kidney. This technic has the advantage of a smaller skin incision and in general is less traumatic to the patient. This reviewer has seen this operation a number of times and has never been convinced that the drainage, whether by Pezzar catheter or other means, has been accurately placed, and has never used this technic, although well qualified surgeons in this country use it.

In discussion of pyelotomy or nephrotomy he naturally recommends the former whenever possible. Where both are required, when possible the combined incisions should be low so that drainage from the kidney will be to the best advantage. Heminephrectomy and resection of a calyx are looked on as they are in this country.

In general, this monograph is well worth reading if one is thoroughly familiar with German medical style and language. The use of words and the style are rather involved and heavy. The forty illustrations are instructive, especially the roentgenograms.

**The Driving Forces of Human Nature and Their Adjustment: An Introduction to the Psychology and Psychopathology of Emotional Behavior and Volitional Control.** By Dom Thomas Verner Moore, Ph.D., M.D. Fabrikoid. Price, $6.50. Pp. 461, with 26 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1948.

Dom Thomas Verner Moore is known for his scholarly productions in psychopathology. Moore has an intense interest in vector analysis, which is a statistical procedure used in psychology to determine constellations of traits or syndromes which are found in certain spheres of abnormal psychology. Most of these syndromes represent clinical syndromes, but are defined in new terms. Nevertheless their identification from the description of single traits with the current terminology is not difficult. One must remember too that Father Moore is known for an effective dilution of freudian psychology. In the present volume he has adequately and acceptably gone through the narrow channel between the Scylla of the Catholic Church's attitude at that time toward psychonalysis and the Charybdis of orthodox freudian psychology. The present volume is a complete clinical survey of the application of his own beliefs toward the psychoneuroses, their development and expression with some emphasis on the psychosomatic aspect of the psychoneuroses and with some discussion of child guidance.

If one has sufficient background to evaluate the deviations of Moore's thinking from accepted psychiatric thought, the book should be a valuable asset in developing his thinking in terms of breadth. One must hesitate to recommend this volume as material for a beginner in the field of psychopathology.

**Toxoplasmosis: A Clinical, Serological and Histopathological Study with Special Reference to the Eye Manifestations. Presentation of Twenty Cases of Proved or Presumable Toxoplasmic Retinopathy and Retino-Encephalopathy with Associated Ocular Manifestations.** By Dr. C. D. Binkhorst. Cloth. Price, $3.75. Pp. 163, with 20 illustrations. H. E. Stenfert Kroese's Uitgevers-Mij N.V., Leiden, Netherlands, 1948.

This monograph on toxoplasmosis covers the field mentioned in the long title. It gives a comprehensive review of the existent knowledge of the subject divided into the usual scheme of epidemiology, immunology, histopathology, clinical aspects, diagnosis and treatment. Sulfonamide compounds have slight therapeutic effect in experimentally infected animals; penicillin has no effect, and streptomycin and chloramphenicol apparently have not yet been tested. There is a brief summary of the 49 cases thus far reported, including 20 of the author's, with detailed discussion of ocular changes.

The serologic studies reported are not reliable, being based on old technic which has since been improved. The clinical and pathologic descriptions and the illustrations are excellent. Here and there are slight deviations from conventional English, indicating foreign authorship, which adds a degree of charm to the opus.

# Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

## ISOLATION PERIODS IN COMMUNICABLE DISEASE

**To the Editor:**—What is the latest information on length of quarantine for measles, mumps, chickenpox, whooping cough, scarlet fever and diphtheria? What are the reasons for changing the old periods of quarantine?

M.D., Ohio.

Answer.—Rigid quarantine regulations are seldom required for the diseases mentioned. However, customary isolation periods are as follows: (1) measles, from the onset of illness until the rash has disappeared; in uncomplicated cases this generally means about ten days; (2) mumps, until all swelling of the parotid glands has subsided, or eight days from the onset of illness; (3) chickenpox, fourteen days, or until the body is free of all crusts; however, the American Public Health Association has expressed the opinion that varicella is not contagious six days after the appearance of the first lesions, regardless of any crusts that may persist; (4) whooping cough, until three weeks after the beginning of the paroxysmal stage; (5) scarlet fever, a minimum period of fourteen days, but a continuation of isolation if there are abnormal discharges; if the latter persist, until forty-five days, when negative nose and throat cultures for hemolytic streptococci should be secured before the patient is released; (6) diphtheria, minimum, seven days, or at any time after that when two successive cultures from nose and throat, taken not less than twenty-four hours apart, are negative for diphtheria bacilli.

Isolation periods are not the same in all states, and consequently the information supplied may be in conformity with public health regulations in one locality but not in another. For some years the American Public Health Association has worked for uniform requirements throughout the country. Changes in isolation periods which are adopted from time to time are based on scientific progress concerning the nature of the acute infectious diseases.

## DIAPHRAGMATIC HERNIA IN PREGNANCY

**To the Editor:**—A young woman has a diaphragmatic hernia (discovered on a physical examination for entering nurses' training). She passed the physical examination satisfactorily, but roentgen rays showed the hernia. She has been advised to have the hernia repaired before getting pregnant.

W. A. Dean, M.D., Tulsa, Okla.

Answer.—There are several factors involved in this problem. One wonders how this hernia was picked up by "routine" roentgen examination unless either the patient complained of symptoms or the hernia was extensive enough to show by flat plate. These hernias are frequently missed by so-called routine studies and are sometimes difficult to demonstrate with barium examination.

If the hernia is asymptomatic or merely a defect in the diaphragm then it probably is of only academic interest and the patient should merely be informed of its presence in case of future trouble.

If the hernia is symptomatic or abdominal viscera are present in the chest cavity then the hernia should be repaired now.

The only effect of pregnancy would be to increase the intra-abdominal pressure and the relaxation of the abdominal wall frequently takes care of this. If the hernia causes symptoms during pregnancy, it can be repaired then.

## USE OF LIVER PREPARATIONS

**To the Editor:**—Please furnish information about the proper use of liver extracts parenterally. It is not uncommon to see patients treated for hypochromic anemia with U. S. P. 15 unit liver extract solution. The detail men tell me that I am doing wrong by using crude liver extract in such cases! Recently when asking for a ½ unit crude liver extract I was told to take a two unit liver, dilute it four fold and use it!

Anthony M. Susinna, M.D., Palisades Park, N. J.

Answer.—Crude extracts of liver are still considered by some authorities to be superior to highly refined preparations for the treatment of spinal cord changes incident to addisonian pernicious anemia. Because it was considered likely that too highly refined and concentrated extracts for injection might omit some, as yet unknown, important principle which may form a part of what is called the antipernicious anemia factor, the U. S. Pharmacopeia Anti-Anemia Preparations Advisory Board has limited the concentration of parenteral liver extract to a maximum of 15 U. S. P. injectable units per cubic centimeter of the finished solution. Most pharmaceutical manufacturers prepare other lesser concentrations of liver extract by dilution of a more concentrated preparation, so that a solution for injection labeled to contain 2 U. S. P. injectable units does not necessarily represent a more "crude" preparation as implied by the lesser concentration. The U. S. Pharmacopeia, however, provides for crude preparations having not more than 2 U. S. P. injectable units per cubic centimeter that are permitted to be labeled as liver injection (crude) when prepared, so that the final product is directly derived from a solution having an alcohol concentration not higher than 70 per cent by volume. Crude extracts labeled as such are usually not available in concentration less than 1 U. S. P. injectable unit per cubic centimeter. Undiluted extracts are thus distinguished from diluted products of the same concentration by the label designation indicated.

The choice between "crude" and "refined" products for the treatment or prevention of neurologic complications of pernicious anemia is still the subject of some controversy, but it is now usually conceded that all extracts which conform to U. S. P. requirements are approximately equal in their ability to prevent or reverse these manifestations of the disease. The diluted preparations should not therefore be viewed so much in the light of inferiority as from the standpoint of suitable concentration to permit adequate maintenance dosage. This should provide not less than the equivalent of 1 U. S. P. unit (oral or injectable, depending on the mode of administration of the product) daily. The minimum recommended dosage can be given as 15 U. S. P. units twice a month with less inconvenience than with lesser doses at shorter intervals, once the disease is brought under control.

Liver extract is ordinarily indicated for treatment of hyperchromic macrocytic anemia rather than for hypochromic microcytic anemia.

## LICHEN PLANUS

**To the Editor:**—A male patient aged 59 is suffering with lichen planus distributed over the entire body, including all extremities, since July 1948. Despite adequate treatment with bismuth compound, and iron, and roentgen therapy, the eruption has progressed with short remissions. The patient has considerable pruritus. Can you suggest anything that might benefit this patient?

Joseph Burns, M.D., Miami Beach, Fla.

Answer.—The use of calciferol (vitamin $D_2$) has recently been recommended for the treatment of lichen planus, but experience with it is still limited. The dosage presumably is the same as for lupus vulgaris; i. e., 50,000 units two or three times daily. The calcium level of the blood serum must be checked at frequent intervals. Most physicians still rely on a combination of rest and relaxation, both mental and physical; the use of heavy metals, as bismuth, mercury or arsenic, and sometimes liver extract. Bismuth sodium triglycollamate, an oral preparation of bismuth, one to two tablets three times a day for four to six weeks, has some enthusiastic advocates. In addition, it is well for the patient to use antipruritic lotions or ointments.

## INSTABILITY IN DIABETES

**To the Editor:**—A woman, aged 34, has been under treatment for diabetes for twenty-four years. At the present time she takes 40 units of globin insulin in the morning and is on a 1,600 calory diet. She is sugar free before breakfast. Before the noon meal her sugar varies from none to 3 or 4 plus. On alternate afternoons she will be sugar free with many episodes of hypoglycemia coming on between four and six o'clock in the evening. Other afternoons the sugar content runs from 1 to 4 plus. An internist she has consulted maintains that she should keep herself sugar free at all times. Her health is otherwise good, and even when hospitalized she reacts the same way. Can you offer suggestions as to the management of this case?

H. V. Temple, M.D., Moab, Utah.

Answer.—In occasional cases complete control of glycosuria is obtainable only at the risk of episodes of hypoglycemia, and in such cases it sometimes is desirable to permit some glycosuria, especially at noon and in the evening, provided always that morning urine is sugar free. When globin insulin is used it sometimes is desirable to give a dose of regular insulin in the morning and inject the globin insulin at noon. The action of globin insulin in most cases is shorter than twenty-four hours, and by the procedure suggested quick action is obtained in the morning when it is needed most and the dose of globin insulin given can be smaller. In the case described I suggest a trial of the effect of 20 units of regular insulin before breakfast, followed by an injection of 20 units of globin insulin before the noon meal.

The causes of the instability in such cases of diabetes are probably many. Frequently they cannot be explained. In many cases instability seems to depend not so much on the utilization of glucose as on instability of hepatic glycogen.

## SENSITIVITY TO RUBBER NIPPLES

**To the Editor:**—An infant's oral tissues are sensitive to rubber nipples to the extent that the mouth and tongue swell and become inflamed. Does any one manufacture a nipple of a substance other than rubber?

M.D., New York.

ANSWER.—It is improbable that the rubber itself or latex from which the nipple is made is causing the irritation in this infant; more probably, if the irritation is due to the nipple it is from some chemical used in the molding or formation of the latex into the form of the nipple. A dermatitis has been described by Schwartz of the United States Public Health Service among laborers wearing rubber gloves in the tanning industry. In this instance it was shown that it was not the rubber latex of the gloves which caused the dermatitis, but certain chemicals used in the manufacture of the rubber gloves. It would seem worth while to inquire into the chemicals used in the manufacture of rubber nipples and perhaps by skin tests ascertain which chemical might be causing the symptoms in this baby. If this could be easily ascertained a rubber nipple might be selected from a firm that did not use this chemical in the manufacture of their nipples.

Before the advent of rubber nipples or glass bottles in the early centuries, such contrivances as small horns with parchment nipples were used, as well as jugs, cans or cups with spouts made of wood, earthenware, tin and other materials. These were used down to the eighteenth and nineteenth centuries, when glass and rubber nipples first came into use.

As far as is known present day nipples are all made of rubber latex. Use of a glass medicine dropper or teaching the infant to drink from a spoon, small glass or cup might solve this problem.

## SUTURE OF PILLARS AFTER TONSILLECTOMY

**To the Editor:**—I have observed a surgeon suture the anterior pillar to the posterior pillar after tonsillectomy, in order to prevent postoperative hemorrhage. Is this considered good procedure?

Paul Russell, M.D., Inglewood, Calif.

ANSWER.—Suturing of the anterior and posterior pillars for the prevention of hemorrhage after tonsillectomy is not a generally accepted procedure among otolaryngologists. It is recommended instead that there be careful inspection of the tonsil fossae for any bleeding areas or vessels. The bleeding points may then be grasped with long artery forceps and a ligature applied by one of several methods. The tonsil pillars contain specialized muscle groups, the names of which denote their origin and attachment. The palatoglossus muscle lies in the anterior pillar; the posterior pillar includes the palatopharyngeus muscle. The latter is the more important but both are concerned with deglutition and, indirectly, with phonation. Respect for these structures is mandatory in a well performed tonsillectomy. Suturing of the pillars together renders them liable to inclusion in the scar tissue laid down during the healing process, with resultant swallowing or phonatory dysfunction. Furthermore, bleeding may occur despite the suturing of the pillars, in which case the blood may dissect either into the soft palate or into the deep cervical fascial spaces, adding still further complications.

## CHANGE OF CLIMATE IN RECURRENT OTITIS

**To the Editor:**—What is the therapeutic value of change of climate in relationship to hearing in a 5 year old child who apparently has allergic tendencies and asthma? This child lives in Oklahoma and has been advised to move to New Mexico or Arizona. What is your opinion on the results of irradiation of the nose and throat with radium?

J. M. Hesser, M.D., Benson, Ariz.

ANSWER.—If the hearing loss is primarily of the auditory nerve or perception type, no change in climate is apt to do any good. If the deafness is of the conduction or middle ear variety and due to frequent attacks of otitis media, then a change to another climate may be of considerable benefit, in certain circumstances.

If it is to work, the removal to another area must result in elimination of the offending allergens. The best example would be in cases of allergy due to pollen present in the home area but absent in another locale.

Improvement of allergy may often result in a diminution in the number and severity of head colds, for these are increased in number and protracted in the person suffering from nasal allergies. Middle ear involvement is seen often in children of this type, and the course of the deafness is further prolonged by the necessary use of antibiotics and sulfonamide compounds in combating the infection. The antibiotics prevent or modify suppurative otitis media and its complications, but their use often results in the appearance of an exudative catarrh which causes considerable deafness and, for weeks after, acute otitis.

Results of irradiation of the nose and throat with radium or roentgen rays are not easily evaluated. If irradiation is used to reduce the number of infections or mechanical obstruction due to lymphoid tissue there is good reason to believe that, in a fair number of cases, considerable improvement is obtained. Like any other therapeutic measure, the results are open to differences in interpretation. Those who use it in conjunction with operation, either before or after, are of the opinion that many persons, especially young children, are so improved that radiation is an agent well worth using empirically. After the passage of time, the effects of radiation therapy wear off. In this event careful retreatment may again offer improvement.

## NASAL IRRIGATION

**To the Editor:**—I am bothered by nasal obstruction whenever I have a cold. When I was in the Army, an otolaryngologist irrigated my nose with a hypertonic or hypotonic solution of either dextrose or sodium chloride. This is the only thing which has ever given me relief without causing an increased congestion after the effects wore off. Are there any methods of relieving nasal congestion which do not cause increased congestion? Does a chloretone® (chlorobutanol) solution have this effect?

W. R. Cohlan, M.D., North Fork, Calif.

ANSWER.—As a general rule, it is not advisable to use nasal irrigation for the relief of nasal obstruction. In exceptional cases an irrigation may be employed to remove thick secretions which the patient is unable to expel. When the nose is irrigated frequently, there is a tendency to a waterlogging of the tissues which impairs their functional capacity and leads to an edematous state. Furthermore, the introduction of a large amount of fluid into the nose may lead to the removal of the mucus blanket which covers the ciliated epithelium and is one of the primary elements in the normal defense mechanism of the nose. A saline irrigation affords temporary relief; repetition may lead to secondary engorgement and stasis. So far as the chlorobutanol solution is concerned, the relief experienced by the patient is in fact an illusion, the same as is experienced after the use of menthol and thymol. In other words, these drugs cause a mild degree of anesthesia which imparts the sensation of increased breathing space.

The safest and simplest method of relieving nasal congestion in an acute rhinitis is to use ephedrine 1 per cent in isotonic sodium chloride solution or to take ephedrine hydrochloride, grain 3/8 (25 mg.) by mouth three or four times daily.

At times an underlying allergy may be a factor, in which case relief may be had from the antihistaminics.

## SPONTANEOUS PNEUMOTHORAX

**To the Editor:**—The query concerning spontaneous pneumothorax (The Journal, January 1, p. 69) suggests the following comments:

The diagnosis of recurrent spontaneous pneumothorax has apparently not been proved, since it is stated that roentgen examination showed partial collapse on the last occasion and it is implied that roentgenograms were not made on the five previous occasions. Also the physical examination was negative in result, and usually the physical examination reveals clearcut signs unless the collapse is extremely slight, in which case the symptoms and period of convalescence necessary would be of short duration, or unless the lungs are already partly adherent. In cases in which roentgen and clinical findings suggest recurrent spontaneous pneumothorax and an adequate air-filled pleural space exists, the next logical step in diagnosis is thoracoscopy. This may reveal an adhesion with a tear in the lung near its visceral attachment which acts as a valve and prevents reexpansion, or it may reveal a large cystic space which actually represents the interior of an inflated lung cyst, in which case some form of pulmonary cystic disease is the cause. Other evidence of pleural disease may be discovered. Such a case was reported by Theodos (*Dis. of Chest* 14:115, 1948) in which cystic changes were limited to the right lower lobe and cure was achieved by lobectomy (Willauer).

The treatment of spontaneous pneumothorax depends on its cause, and without accurate diagnosis it is just as dangerous to treat this condition as any other disease. Thus talc insufflation (Steele), suggested in the answer, would prove hazardous in those conditions mentioned in which the talc might gain access to the lung. Talc insufflation should never be done without careful inspection of the visceral pleura thoracoscopically. The improvement of diagnostic methods and increased skill in their application will narrow the already rare indications for the production of pleural symphysis with talc or by any other method.

*J. W. Savacool, M.D., Philadelphia.*

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# CONGESTIVE HEART FAILURE

## Adaptation of the Body to Inadequate Cardiac Output

WILLIAM DOCK, M.D.
Brooklyn

Until early in the nineteenth century physicians considered dropsy as a disease in itself, much as our generation deals with hypertensive cardiovascular disease. When renal, cardiac and hepatic diseases were defined, edema became merely a symptom. Starling pointed out that rise in venous pressure or fall in plasma protein would have similar effects in shifting fluid from the blood stream to the tissue spaces, and for several decades this explanation seemed to cover all cases of dropsy. High venous pressure was thought to underly the dyspnea, the proteinuria and the hepatic changes characteristic of heart failure. MacKenzie and Lewis were almost alone in their assumption that when the heart muscle failed the body would not receive its usual blood supply and that fatigue and dyspnea were due to anoxic metabolism. This view was given emphasis in Altschule's critical study [1] of heart failure. There the lack of correlation between symptoms and the elevation of venous pressure was noted.

In 1941 Borst, of Amsterdam, the Netherlands, in reporting the electrolyte retention which follows gastric hemorrhage, pointed out that in all forms of dropsy there were circulatory disturbances similar to those in hemorrhage, shock or dehydration.[2] He concluded that salt and water retention were secondary to inadequate cardiac output and that excretion of urine with a low sodium content in patients with congestive heart failure was one of the essential proofs that failure to maintain the proper output was present in this condition. This work was not known to Stead and his colleagues when they developed the view that cardiac edema was due to reduced volume of glomerular filtrate and was reflexly brought about by an inadequate blood supply to the tissues.[3] The existence of such a reflex mechanism had been proved by the classic studies of Homer Smith on renal blood flow.[4] Such a mechanism also operates in hypoproteinemia, and along with it increased desoxycorticosterone action as shown by reduction in electrolyte content of the sweat as well as of the urine.[5] The salt content of sweat and urine both return to normal, as does the glomerular filtrate, when the blood volume is restored by injecting human albumin.

Hemorrhage and shock reduce cardiac output by diminishing the venous return. In heart failure, venous return is ample but the work done by the heart is not adequate to meet the needs of the body. Disease of the pericardium may embarrass diastolic filling of the heart, and disease of the myocardium may diminish effectiveness of systolic discharge. If either develops rapidly in a person otherwise normal, the minute volume flow of blood under basal conditions will be reduced, and signs and symptoms like those of shock may be recognized. If it occurs gradually in a person who has metabolic or other causes for high basal cardiac output, the actual basal output may be normal or high, and in the latter case pulse pressure, heart sounds and impulses also will be increased. As in the case of other systems, the indications of failure do not depend on the absolute amount of work the organ or system is doing, but on the ratio of work done to that necessary for homeostasis, for maintaining a normal internal environment under existing stresses. The cardiac output adequate for a starving man at rest would be wholly inadequate for a Peruvian miner carrying a pack up a ladder 17,000 feet above sea level.

### ADAPTATION TO CIRCULATORY FAILURE

When the cardiac output drops rapidly from an adequate to an inadequate level, whether because of shock, hemorrhage, pericardial tamponade, extreme tachycardia, acute myocardial failure or acute obstruction to systolic emptying, the symptoms are the same. Loss of consciousness, particularly if erect or sitting; pallor, cold sweat, nausea, weakness and anuria are common to all these conditions, and death may occur suddenly. Gasping respiration is not uncommon. Systemic venous pressure may be within the normal range, or low in shock or slightly or moderately elevated in acute forms of cardiac disease. Diastolic arterial pressure may be low or normal, or even elevated, if the patient was hypertensive previously. The patient may feel well and even appear well if lying still, but

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From the Department of Internal Medicine, Long Island College of Medicine.

The Roger S. Morris Lecture delivered at The Academy of Medicine, Cincinnati, March 1, 1949.

[1] Altschule, M. D.: The Pathologic Physiology of Chronic Cardiac Decompensation, Medicine **17**: 75-154, 1938.

[2] Borst, J. G. G.: The Restoration of the Circulation of Blood After Gross Hemorrhage into the Intestinal Tract: A Comparison of the Failure of the Circulation in Heart Failure and in Bleeding from Peptic Ulcer, Nederl. tijdschr. v. geneesk. **45**: 1523-1524, 1941; The Maintenance of an Adequate Cardiac Output by the Regulation of the Urinary Excretion of Water and Sodium Chloride: An Essential Factor in the Genesis of Edema, Acta med. Scandinav., 1948, supp. 207.

[3] Warren, J. V., and Stead, E. A., Jr.: Fluid Dynamics in Chronic Congestive Failure, Arch. Int. Med. **73**: 138-147 (Feb.) 1944.

[4] Smith, H. W.: The Physiology of the Kidney, New York, Oxford University Press, 1937.

[5] Eder, H. A.; Chinard, F. P., and Lauson, H. D.: Studies on the Mechanism of Edema Formation in the Nephrotic Syndrome, Proc. Soc. Exper. Biol. & Med., to be published.

he becomes critically ill and has a drop in diastolic pressure, or he may even die, if exercise or the erect posture is attempted. Because the indications of acute cardiac failure and of shock are identical, and the venous pressure in either may be in the normal range, the differentiation often must be made on collateral evidence. This may be misleading, as when a patient being treated for peptic ulcer goes into shock and is assumed to be having internal hemorrhage but is later proved to have had a painless myocardial infarct. It is well to bear in mind that management must often begin without knowledge of the nature of the underlying condition, and that a confidently held diagnosis may prove erroneous in a case of acute circulatory collapse.

When shock or acute failure subsides into a subacute state, with the patient comfortable at rest but easily made dyspneic or giddy on effort, it is possible to demonstrate that a number of compensatory mechanisms are at work. After hemorrhage, hematic dilution and new formation of blood are striking; in heart failure, increase in the heart volume usually is demonstrable together with a rise in venous pressure and in total blood volume. In all these conditions the percentage decrease in renal blood flow is much greater than in cardiac output,[6] and the urine is scanty, highly concentrated but poor in sodium chloride. In all such patients splanchnic blood flow is decreased and hepatic venous oxygen tension is low.[7] These changes are observed in heart failure even when the basal cardiac output is high because of anemia or other causes. Another change common to all, but most striking in heart failure with severe anemia, is a rise in venomotor tone, shifting blood into the large veins and raising central venous pressure even when the total blood volume is low. Venomotor tone is controlled by the nervous system, and the high venous pressure in chronic heart failure falls promptly on the injection of sympathicolytic agents such as tetraethyl ammonium chloride.[8] The change peculiar to myocardial failure is an increase in ventricular volume (dilatation of the heart) and later, if the disorder persists for weeks or months, hypertrophy of the heart and great veins. Decrease in renal and splanchnic blood flow, rise in vasomotor tone, sodium and water retention and rise in blood volume—these adaptations occur in hemorrhage, acute or subacute shock, and in all types of heart failure, acute or chronic.

In the earlier stages of progressive myocardial failure patients show few or none of the signs and symptoms of acute circulatory collapse. They do have weakness or fatigability and have dyspnea on effort or after going to sleep in the recumbent position. Some of those who are dyspneic at night have excellent capacity for physical effort by day. Few persons with chronic cardiac disease are giddy in the erect position, because real discrepancy between cardiac output and the circulatory demands of the body occurs only in the severe or terminal phases of chronic or recurrent heart failure, whether due to pericardial or myocardial disease. Both these latter types are alike in signs and symptoms and can be distinguished only by careful study of the heart itself.

## CARDIAC BURDEN: EXTRINSIC FACTORS IN HEART FAILURE

Myocardial failure is due to myocardial fatigue and loss of efficiency, but it usually is seen associated with conditions which elevate the basal level of mechanical work performed by the ventricles. However, myocarditis, coronary insufficiency or infiltration by amyloid or glycogen may so impair the heart muscle that it fails to meet basal demands which are even less than normal. The burdens to be considered are (1) increase in rate, with shortening of the period of recovery, (2) increase in resistance to systolic ejection and (3) increase in stroke volume of blood being moved.

1. Increase in rate is usually observed in heart failure. It often is due to systemic infection, toxemia or other conditions which are in themselves bad for the heart. But in emotional tachycardias without hypertension, and in acute ectopic cardiac arrhythmias, occasion is afforded for observing how myocardial failure may be precipitated by accelerated rate alone. Many illnesses which confine patients to bed are followed by postural tachycardia which lasts for weeks or months. In such cases cardiac insufficiency may develop not during the acute illness but during convalescence. This is not uncommon after myocardial infarction and is one of the phenomena which has led some physicians to urge early assumption of the sitting posture and walking short distances on the level after recovery from the initial episode. A faster rate increases fuel and oxygen needs of the heart per minute, at constant levels of work. It shortens time available for recovery. As metabolic processes become slower with advancing age, heart failure is seen more often with any given degree of acceleration and after relatively short periods of acceleration. At ages under 25, cardiac insufficiency may not occur for days with an ectopic rhythm causing a rate of 200 or more; after the age of 50, failure is not uncommonly evident after a day or even a few hours with rates over 150.

2. Elevated systemic pressures up to twice the normal level and elevated pulmonic pressures up to four times the normal level, when developed slowly over months or years, are tolerated by the heart without evidence of dilatation or failure in the majority of instances. This is also true of aortic and pulmonic stenosis. Nevertheless, when hypertension develops rapidly or when it has been present for years or decades, dilatation and failure occur far oftener than with normal pressures. In mitral stenosis, auricular and pulmonary venous pressure rises on the left side first, pulmonary arterial pressure rising as a result of changes in the lungs. When failure occurs, right-sided dilatation with a rise in systemic venous pressure is often more striking than evidence of further rise in pulmonic venous pressure. In these cases pulmonic hypertension is of paramount importance as the burden which precipitates failure.

3. Elevated stroke volume is well tolerated for months or decades when it occurs in young persons and develops gradually. It may be present in fever, exophthalmic goiter, anemia, pregnancy, osteitis deformans and arteriovenous fistulas. It is seldom the only circulatory burden present when failure sets in, for in almost all cases acceleration of the heart rate is present, along with the increased volume flow. Because of rapid rate, stroke volume infrequently is significantly elevated in

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[6] Lauson, H. D.; Bradley, S. E., and Cournand, A.: The Renal Circulation in Shock, J. Clin. Investigation **23**: 381-402, 1944.

[7] Myers, J. D., and Hickam, J. B.: An Estimation of the Hepatic Blood Flow and Splanchnic Oxygen Consumption in Heart Failure, J. Clin. Investigation **27**: 620-638, 1948.

[8] Relman, A. S., and Epstein, F. H.: Effect of Tetraethylammonium on Venous and Arterial Pressure in Congestive Heart Failure, Proc. Soc. Exper. Biol. & Med. **70**: 11-14, 1949.

heart failure except in the cases of valvular insufficiency or complete block. In all the aforementioned conditions the ventricle empties against low resistance, and the increase in burden on the muscle is not proportional to rise in the stroke volume. It must be remembered that the normal increase in stroke volume, occurring in exercise, is due to peripheral vasodilatation, with fall in diastolic pressure and arterial resistance. The great increase in minute volume of athletes under maximal stress occurs with no increase, and often an actual decrease, in heart volume. This is interpreted as meaning that myocardial effort per beat is not increased. Ventricular emptying is performed efficiently and ventricular diastolic and venous pressures are low. Even pulmonic resistance decreases during exercise, and right ventricular dilatation is not seen in the hearts of trained men doing maximal work, with pulmonary blood flow per minute five to eight times the basic rate. Yet in such men, the heart increases in size with the rise in output and arterial pressure which occurs for a short time on resumption of normal breathing after straining to expire against a closed glottis. We may conclude that the Valsalva experiment imposes greater burdens, of brief duration, than does moderate or even vigorous exercise, and that rise in diastolic pressure imposes a far greater burden on the heart than does a rise in stroke volume due to peripheral vasodilatation.

In summary, accelerated rate is usually present when the heart fails, elevated arterial resistance often is present, elevated stroke volume seldom. Rise in stroke volume due to increased need of the tissues for blood causes no great burden to the normal heart or that in early failure; rise in resistance to systolic emptying is well tolerated but does burden the heart; accelerated rate causes a proportional rise in cardiac metabolism and shortens the recovery period. In patients under 25 years of age, myocardial inflammation or infiltration is the usual cause of heart failure; in those over 35 years of age such a complication is present in less than half the cases, while abnormal burdens on the heart are commonly present. Some of these burdens can be reduced by treatment, and this may alleviate or entirely remove the signs and symptoms of heart failure. Failure to seek out such corrigible burdens is a cardinal sin for a physician.

When myocardial failure begins to develop, it necessarily results in decrease in efficiency of systolic emptying. Failure to empty is the cause of dilatation and of a rise in diastolic pressure within the ventricle. Even in severe cardiac insufficiency, ventricular filling takes place chiefly in the first half of diastole and auricular and ventricular pressures are approximately the same through the last half or two thirds of diastole. Thus the venous pressure is simply a reflexion of the diastolic pressure in the right ventricle. While rise in venous pressure and ventricular filling do augment systolic discharge, this usually falls below the requirements of the tissues for blood in all patients with symptoms of cardiac insufficiency. To maintain arterial pressure, vasoconstriction in various regions occurs and blood is shunted to the brain and the heart. While it is feasible to measure cardiac output and the fractions going to various regions, this is not necessary for clinical purposes. Useful clues to the degree of fall in the ratio of actual cardiac output to optimal cardiac output are given by the liver and the kidneys.

## EFFECTS OF LOW OUTPUT ON LIVER AND KIDNEYS

Using aromatic acid excretion and polysaccharide excretion as measures of renal blood flow and glomerular filtrate formation, it was shown by early students that the erect posture and exercise reduced renal flow and filtration, the latter falling much less than the former.[4] Later studies disclosed that violent exertion may reduce urine formation to zero for some minutes and be followed by oliguria and proteinuria. In shock, exercise and heart failure, reduction in renal blood flow, in urine formation and in sodium excretion are useful indexes of the decrease in adequacy of cardiac output. Rate of edema formation depends largely on the fall in ratio of excreted sodium to sodium ingested or injected, although when sodium ingested is low and excretion is forced by mercurial diuretics, water retention may exceed sodium retention, and the sodium content of blood and edema fluid may be lower than normal. In the patient with evidence of chronic cardiac disease, proteinuria which is not explained by a specific renal lesion and retention of administered salt may be taken as evidence of a definite fall in the ratio of actual to optimal cardiac output. Accurate measurements of renal blood flow and of cardiac output permit investigators to give some precision to the calculation of this ratio. When cardiac output is normal or high but renal filtrate or blood flow is reduced, either the kidney is the seat of local disease or optimal output must be extremely high.

Because renal metabolism, unique in this respect, declines with renal blood flow, no renal injury is sustained in shock of cardiac insufficiency unless the output of the heart is less than one-fifth optimal for many consecutive hours. The liver, however, does not reduce its metabolism when its blood supply is reduced. The cells at the centers of the lobules, where blood enters the radicles of the hepatic veins, are exposed to the lowest oxygen tensions and are the first to suffer when cardiac output becomes inadequate. But in shock the whole liver may be anoxic, and irreversible shock is associated with severe hepatic damage. When there are brief intermittent episodes of heart failure, hepatic cellular damage at the centers of lobules is repaired between bouts of failure and there are no signs of hepatic injury.

In chronic failure the central part of the lobe atrophies, and the lobule becomes a wall of parenchyma around a venous lake, which varies in size with the severity and duration of cardiac insufficiency. Fatty degeneration and interstitial edema affect even the periphery of the lobules when cardiac output is inadequate. This results in increased bulk and tenderness of the liver. In some instances aching pain may arise in the swollen liver. Thus, the state of the liver becomes another clue to the severity and duration of a decline in actual cardiac output in relation to optimal output. Hepatic disease may confuse the evidence, and anemia always accentuates hepatic damage in relation to decline in splanchnic flow. It is to be emphasized that rise in venous pressure, which is lowest at the center or outflow zone of the lobule, does not damage the liver. In heart failure and in cirrhosis of the liver venous pressure is high in glands like the pancreas, where venous pressure is always higher than in the liver, through which all the splanchnic venous blood flows. In spite of exceedingly high venous pressures, changes do not occur in gastrointestinal or pancreatic glands similar to those observed in the liver in cardiac failure. While hepatic damage is not due to high venous pressure, once the centers of lobules are changed to venous lakes hepatic volume increasingly reflects the levels of hematic volume and venous pressure.

### EDEMA AND DYSPNEA IN CARDIAC DISEASE

Shortness of breath is due to many factors. A decidedly important one is the responsiveness of the central nervous reflexes which control respiration. Many persons become short of breath, but actually overventilate their lungs, when they are emotionally disturbed. In its extreme form this is hysterical hyperpnea. Heart disease not infrequently occurs in patients with highly reactive breathing centers, and they are dyspneic with little organic disease. The sensitivity of the nerve endings in the lung is increased by inflammation or by sudden changes in the stiffness of the lung. Hence one observes dyspnea at rest at the onset of pneumonia, when only a small fraction of the lung is involved, and may encounter none in advanced tuberculosis. Edema of the lungs, or sudden rise in pulmonary venous pressure, may stiffen the lungs and make respiration rapid, shallow and inefficient. Both of these conditions also encroach on the air space in the lungs and reduce the vital capacity—the volume of air the patient can move with one maximal inspiratory and expiratory effort. Dyspnea is often minimal in young persons with mitral stenosis and exceedingly high pulmonic venous pressure. This leads one to conclude that pulmonary edema and sensitization of the respiratory reflexes due to inadequate supply of blood to the tissues of the body are the chief causes of cardiac dyspnea and of the dyspnea seen in shock and anemia.

Pulmonary edema, the chief factor in determining the urgency of cardiac dyspnea, is often a purely local manifestation of general anasarca. At times, however, pulmonary edema is pronounced although edema elsewhere in the body is not demonstrable. To understand these two types of pulmonary edema, and their endless intergradations and combinations, the main factors responsible for the localization of edema must be borne in mind. The thesis that edema is merely a resultant of high venous pressure and low serum protein is now known to be inadequate.

*Experimental Production of Edema.*—The simplest way to cause experimental edema is to abolish the pulse wave and perfuse the vessels with blood under a constant head of pressure. Lymph flow depends on the pulsation of the small vessels; it ceases and edema develops rapidly when pulsation is reduced or abolished.[9] Then venous pressure may be low and serum protein high, but edema forms quickly and inevitably. Vasoconstriction or arterial disease with resulting low pulse pressure predispose to edema formation. In thrombophlebitis of the leg edema formation is minimal, in spite of high venous pressures, unless there is arteriospasm. Relief of this spasm by paravertebral block may cause the edema to diminish greatly in a few hours, although venous pressure actually rises with the increase in arterial flow.[10]

In normal men and animals lymph flow ceases in a motionless dependent limb.[11] High venous pressure merely exaggerates the rate of edema formation in such dependent tissues. There is no general lymphostasis in patients with cardiac disease, even when venous pressure at the orifice of the thoracic duct is unusually high. When the legs have been edematous for long periods, the patient with cardiac disease may have dilated channels and incompetent valves in the lymphatic vessels of the edematous regions.[11b] When the leg is raised to the level of the heart as the subject lies down, flow in these channels is as rapid as that in the narrow lymphatic vessels of normal skin. The chief effect of increase in rate of tissue fluid formation, in cardiac disease or in hypoproteinemia, is to increase the rate of lymph flow.

The rate of fluid accumulation in the forearm when veins and lymphatics are occluded by a pneumatic cuff at 20 mm. of mercury is about equal to the lymph flow, per gram of tissue, from the heart or the lung of a dog under basal conditions.[12] At a venous pressure of 50 mm. of mercury fluid accumulates ten to twenty times as fast. In the dog, lowering plasma protein from 6.5 Gm. to 4 Gm. per hundred cubic centimeters raised the lymph flow sevenfold, and compression of the pulmonary veins until pulmonary arterial pressure was raised from 22 to 55 mm. of mercury raised lymph flow thirtyfold.[11a] These observations suggest that extra fluid formed in the tissues by rise in venous pressure can be rapidly returned to the blood stream via the lymphatic vessels. But in injured or dependent regions edema formation is hastened by high venous pressures.

Hemoconcentration is seen in acute cardiac failure only if the patient has become dehydrated. The blood volume either is normal in relation to the hemoglobin level in the patient with cardiac disease, or it is elevated. Renal function declines not because of but in spite of a high plasma volume, and on recovery renal function rises as blood volume falls. Thus, cardiac edema can never be explained in terms of high venous pressure, rapid formation of tissue fluid, extrarenal diversion of fluid or renal retention to restore blood volume.

The experiments of Wégria and his associates [13] with dogs show that rises in renal venous pressure between the limits of 15 and 40 cm. of water do not reduce renal blood flow or filtration rate, but as the venous pressure rises the rate of reabsorption of water and salt by the tubule increases. Pressure was raised only in the left renal vein, and the functions of the two kidneys were compared. A concentrated urine, low in sodium, came from the congested kidney. At levels of venous pressure around 30 cm. of water, salt and water excretion by the congested kidney was reduced as much as 50 per cent in these experiments with acute venous pressures. Therefore, rise in systemic venous pressure does augment the salt and water retention which is evoked by a fall in the ratio of actual cardiac output to optimal cardiac output, with reflex renal and endocrine adjustments similar to those in shock and with the low blood volume of hypoproteinemia. The mechanisms which evolution has perfected to deal with shock are not inhibited when cardiac output is impaired by heart failure, they are potentiated by rise in systemic venous pressure.

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[9] Parsons, R. J., and McMaster, P. D.: The Effect of the Pulse upon the Formation and Flow of Lymph, J. Exper. Med. **68**: 353-375, 1938.

[10] Ochsner, A., and DeBakey, M.: Thrombophlebitis: The Role of Vasospasm in the Production of the Clinical Manifestations, J. A. M. A. **114**: 117-123 (Jan. 13) 1940.

[11] (*a*) Drinker, C. K., and Yoffey, J. M.: Lymphatics, Lymph and Lymphoid Tissue, Cambridge, Mass., Harvard University Press 1941. Drinker, C. K.: The Lymphatic System, Stanford University, Calif., Stanford University Press, 1942. (*b*) McMaster, P. D.: Changes in the Cutaneous Lymphatics of Human Beings and in the Lymph Flow Under Normal and Pathological Conditions, J. Exper. Med. **65**: 347-392, 1937.

[12] Krogh, A.; Landis, E. M., and Turner, A. H.: The Movement of Fluid Through the Human Capillary Wall in Relation to Venous Pressure and to the Colloidal Osmotic Pressure of the Blood, J. Clin. Investigation **11**: 63-95, 1932.

[13] Wégria, R.; Keating, R., and Ward, H.: The Effect of Increased Renal Venous Pressure on the Excretion of Sodium and Water by the Kidney, Proc. Soc. Exper. Biol. & Med., to be published.

Until the body begins to store up water and salt, rise in venous pressure does not cause massive edema. When retention of water and salt has increased the extracellular fluid of the body by 10 to 20 per cent, edema appears regardless of venous pressure. This will first be evident in the sites where tissue pressure is low, pulsation is small and venous pressure relatively high. In the splanchnic area, which drains through the portal vein, venous pressure is relatively high in all mammals. In man, due to the erect posture, venous pressure is relatively high in the legs during much of each day and it is high in the dorsal part of the lungs when man is supine in bed. In most mammals retention of fluid is first evidenced by ascites; in man it is first apparent in the legs by day and in the lungs at night. In many women premenstrual edema occurs as a result of the salt-and-water-retaining action of ovarian steroids. This usually takes the form of edema of legs and ankles; it occurs with normal levels of protein, venous pressure and pulse pressure. Similar edema can be evoked with desoxycorticosterone, or with daily doses of sodium chloride over 25 to 30 Gm. If cardiac failure is latent, any of these causes for ankle edema may produce pulmonary edema beginning usually with acute nocturnal seizures.

*Pulmonary Edema.*—While the spongy pulmonary tissue would appear to be a preferred site of edema formation, it must be remembered that the mean pulmonary arterial pressure is actually less than the colloidal osmotic pressure of plasma, so that transudation will occur slowly under normal conditions. Even after pulmonary hypertension has developed, the high pulse pressure, the rapid lymph flow and the evaporation from aerated alveolar surfaces all serve to cut down pulmonary edema. When venous pressure rises gradually, over months or years, as in the lungs in disease of the mitral valve, the walls of the venules are structurally altered, so that transudation is matched by lymph flow under the existing venous pressure levels.

Pulmonary edema occurs late in hypoproteinemia or when pulmonary venous pressure rises steadily to abnormally high levels, but it may be the first sign of cardiac insufficiency. In the past, this has been blamed on "left-sided failure," because it was usually seen in aortic valve disease and in hypertension; no one seemed disturbed by its late occurrence in that form of disease of the left side of the heart, mitral stenosis, in which pulmonary venous pressure was highest and the capacity of the left side of the heart to receive and forward blood was least adequate to respond to bodily needs or right ventricular output. In mitral stenosis pulmonary arterial pressure rises, secondary to the rise in venous pressure in the lungs, and the right ventricle often is greatly hypertrophied. From appearances, this right ventricle should be able to force large amounts of blood into the lungs and thus overwhelm the left side. But pulmonary edema occurs late, when generalized edema and ascites are well defined. In patients who do have pulmonary edema, the left ventricle is hypertrophied, while the right may be normal. Any acute rise in pulmonary venous pressure and resistance to pulmonary flow would seem far more likely to reduce right ventricular output in these persons than in the patients with mitral stenosis. And as the patients who get acute pulmonary edema often do so at night, when bodily demand for blood flow is minimal, and are able to carry out vigorous effort by day, it seems unlikely that high right ventricular output alone causes pulmonary edema in these cases. The paradox of acute pulmonary edema is best understood by comparing what happens in a typical day in mitral stenosis and in a case of aortic disease with acute nocturnal dyspnea due to pulmonary edema.

## EFFECT OF SODIUM RETENTION

*Mitral Stenosis.*—A patient with mitral stenosis, slight ankle edema and an enlarged liver has learned that she sleeps better propped up on several pillows. In the sitting position, even in normal persons, vital capacity is higher than when recumbent. As the center of mass of the left ventricle averages 7 to 10 cm. lower, in relation to the center of mass of the lungs, in the erect position than when one is supine, the average pulmonary venous pressure must rise 5 to 8 mm. of mercury in order to maintain the same blood flow in the supine posture as when erect.[14] Cardiac output rises when one lies down, partly because the venous blood trapped in the legs and abdomen by gravitational pressure in the veins flows back into the main venous reservoir, partly because a slight fall in peripheral resistance and in diastolic pressure occurs when the cerebral region is lowered to the plane of the heart. On going to bed, therefore, everyone experiences a rise in pulmonary venous pressure and a lower venous pressure in the legs. In mitral disease both effects are reduced, because the patient usually sleeps propped up in bed. Because pulse pressure in persons with mitral disease is usually low, and the legs are still below the cardiac level when the patient sleeps, edema fluid is mobilized slowly and sudden shifts of blood and edema fluid seldom occur at night. If such a patient has much salt at dinner, she usually notices that her legs are more edematous next morning, and her dyspnea on dressing may be increased.

*Aortic Insufficiency.*—On the other hand, a well-compensated middle-aged man with aortic insufficiency usually has high pulse pressures in his legs and no decrease in cardiac output under basal conditions. On exercise, his pulse pressure increases, but if he is on his feet and working all day, his output may not rise enough to prevent decrease in renal blood flow, with salt and water retention. Usually this is excreted as fast as it is mobilized from his lower extremities after he goes to bed. His cardiac output is normal for basal conditions, and in bed it is not as great as when he was exercising and had muscular vasodilatation by day. One day his exertions are greater, his salt intake higher and his fluid retention more than usual. Although he has not noticed edema of his ankles, when he lies down a liter or more of saline solution rapidly is mobilized into his blood stream, raising effective blood volume and cardiac output even higher than it usually is when he is in the recumbent position. Since his muscles are at rest and muscular vasodilatation absent, systemic resistance is relatively high. In aortic insufficiency the left ventricle empties its huge stroke volume but diastolic reflux is increased if the peripheral vascular tone is high.

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[14] Dock, W.: Anatomical and Hydrostatic Basis of Orthopnea and of Right Hydrothorax in Cardiac Failure, Am. Heart J. **10:** 1047-1055, 1935.

As a result of increased stroke volume without vasodilatation, left ventricular diastolic pressure and pulmonary venous pressure soon rise above the daytime level. Edema begins to form in the lungs, where ventilation is minimal and evaporation much less than when the patient was active during the day. Most of the lung is dependent to the left ventricle, and edema forms readily at the most dependent parts. Aeration ceases in these, and arterial cyanosis develops as blood pours through these airless lobules. Arterial anoxia causes reflex pulmonary vasoconstriction and rise in heart rate; these in turn reduce pulmonary pulse pressure and lymph flow. Pulmonary edema rapidly increases. The man awakes, gasping and frightened. Breathing now causes audible rattles, which frighten him more, and this in turn causes pallor and further systemic vasoconstriction, accelerated heart action with further loss of myocardial efficiency, further rise in ventricular diastolic and pulmonary venous pressures. Now, even if he sits up, the pulmonary edema may increase, but it will gradually disappear if he walks about or if the vicious circle is broken by the relaxation afforded by morphine, the improved heart action effected by strophanthin, or the fall in venous return which follows venesection or pressure breathing with oxygen.

If this man had ingested only 200 mg. of sodium the previous day he could not have retained enough saline fluid in his tissues to initiate the episode; had he been given a mercurial diuretic at 5 p. m. he would have been disturbed by nocturia but not alarmed by dyspnea. A comparison of cases of mitral and aortic heart disease brings out the relative unimportance of venous hypertension in relation to the signs and symptoms of cardiac insufficiency. Because episodes of nocturnal dyspnea occur with little other evidence of heart failure, some physicians have though the attacks must be of nervous origin. Yet the dramatic nature and occasionally fatal outcome of such bouts have led others to regard them as evidence of severe heart failure. This seldom is the case; not infrequently a man with aortic insufficiency will be able to resume hard work the morning after such a seizure.

*Advantages of Sodium Restriction.*—What is proved by these cases is that nothing is more harmful to the person with cardiac disease than rapid increase of blood volume by infusion of saline. The effects are especially striking when patients are suffering from febrile illness, or have been undernourished, or have just undergone operative intervention. Then liberal administration of isotonic sodium chloride solution by vein can quickly precipitate acute pulmonary edema even though myocardial failure is minimal. The rapid mobilization of edema fluid from the legs, when an ambulatory patient lies down flat, imposes a similar burden on the heart and lungs. Because they do not evoke vasodilatation or increased pulmonary ventilation, meals rich in salt and infusion of saline solution actually are worse for the heart and cause pulmonary edema in the recumbent patient much more readily than does moderate exercise in the erect posture.

About 3 Gm. of sodium must be retained to form every liter of edema fluid. When the vena cava is ligated, venous pressure in the legs is higher than in most persons with cardiac disease, but there is no sodium retention by the kidney, lymph flows freely and edema of the legs is minimal. When cardiac output falls below optimal, even though systemic venous pressure is normal, edema, ascites and hydrothorax develop if the patient is active by day and has a liberal salt intake. Among the great apes, living on seeds, nuts and fruit, sodium intake rarely is over 250 mg. on a 3,000 calorie intake; among primitive people in the tropical rain forests it is rarely more than 500 mg. per day, and often is much less. On many American diets, the sodium intake exceeds 5 Gm. per day. A truck-driver, eating four meals a day in restaurants, retained over 9 Gm. of sodium a day for three days at the onset of acute nephritis. The mechanism for sodium retention, evoked whenever actual cardiac output falls below optimal levels, is invaluable to tide men and animals over hemorrhage or shock but may lead to rapid development of anasarca when persons on modern highly unphysiologic levels of salt ingestion have even moderate degrees of heart failure for a few days.

Rate of edema formation in the person with cardiac disease is determined more by salt ingestion than by reduced cardiac output and renal blood flow, and is therefore a poor sign of the severity of failure. Its localization is not always a dependable clue to the side of the heart on which venous pressure is most elevated. Women with hypertensive heart disease often have severe ankle edema with normal systemic venous pressures. A patient with aortic, mitral and tricuspid insufficiency may have a pulsating liver but no orthopnea or ankle edema in spite of a low cardiac output and extremely high systemic and pulmonic venous pressure. Pulsation and lymph flow in such a patient's tissues are unusually good, and the blood volume is high in relation to extracellular fluid.

### PULMONARY EDEMA AFTER MYOCARDIAL INFARCTION

The development of acute pulmonary edema within a few hours after the onset of myocardial infarction with evidence of peripheral vascular collapse is not uncommon. Here blood volume and extracellular fluid volume may be normal at the onset, and it therefore has been customary to ascribe the pulmonary edema to high venous pressure back of the injured left ventricle. In these cases the pulmonic second sound, as well as the other heart sounds, is usually faint. Pulmonary arterial hypertension, which invariably accompanies significant rise in pulmonary venous pressure, is absent or minimal. Pulmonary venous hypertension probably is a minor factor in this type of edema, which has been observed in other types of shock, including the shock induced in dogs by removing 25 per cent of their blood volume.[15] Pulmonary edema in these states of profound shock is apparently due to injury to the pulmonary capillaries by the products of tissue anoxia; it is aggravated by infusion of saline solution but not by transfusion. Once pulmonary edema became recognized as a sequel of peripheral shock, the mystery of pulmonary edema in acute coronary attacks, with faint pulmonic second sounds, appeared to be solved, and the rationale of transfusion in this type of shock was established.

Pulmonary edema and hydrothorax rather than high venous pressure are the important pulmonary factors in causing dyspnea in heart failure. Since cardiac edema results from the changes evoked by a decline in adequacy of cardiac output, even cardiac dyspnea is due, fundamentally, to the decrease in effectiveness of systolic discharge and the ingestion of too much salt. The aim of therapy is, therefore, to reduce the bodily demand for a large volume of blood flow, to increase the effectiveness of systole and to combat the rise in blood volume and extracellular fluid volume by withdrawing sodium or by venesection.

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[15] Eaton, R. M.: Pulmonary Edema: Experimental Observations on Dogs Following Acute Peripheral Blood Loss, J. Thoracic Surg. **16**: 668-694, 1947.

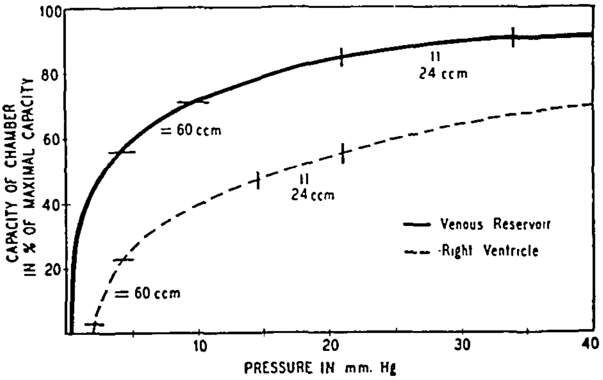
*Adaptation of Body to Lessened Cardiac Efficiency.*—While it is not possible to study the rate at which the body adapts in various ways to a falling level of cardiac efficiency, it has been most instructive to observe adaptation to rising myocardial efficiency under therapy. In a group of patients with low cardiac output, observed by DiPalma,[16] the blood volume prior to therapy was over 100 cu. cm. per kilogram of body weight, as compared to less than 80 cu. cm. in normal persons and 85 cu. cm. in a group with failure due to high cardiac output. Circulation time averaged 26 seconds in the high output group and 39 seconds in those with low output. The latter group, during two weeks of definite clinical improvement, had a fall of 65 per cent in circulation time and 28 per cent in blood volume. In the high output group, with striking clinical improvement, the fall in blood volume was only 5 per cent and that in circulation time was only 35 per cent. Red cell mass remained constant in those with high output but fell 25 per cent during recompensation of the low output group. In the latter group, total plasma protein values fell faster than blood volume, so that on the third day of therapy the serum protein level had fallen from 6.5 to 5.8 Gm. per hundred cubic centimeters, the blood volume from 7,400 to 6,200 cu. cm.

It is thus proved that when venous pressure rises, a high blood volume can be maintained only by increasing the total mass of blood protein and red cells, and when venous pressure falls, protein and red cells must be destroyed in order for a decline in blood volume to occur. In failure with high output, peripheral vasodilatation allows blood to enter venules under relatively high pressure, and to return rapidly to the heart even if the venous channels are relatively narrow, due to high venomotor tone. In such cases blood volume increases but little in heart failure, and if anemia is severe, the volume remains less than normal. With low output failure, the body is able to get along with a reduced total blood flow, and there is a vasoconstriction which reduces the pressure under which blood enters the venules. Wide venous channels and sluggish return flow call for a great increase in blood volume in these cases, and circulation time is slow. In both types of cases the most suitable adjustments are effected by the body.

## THE NATURE OF COMPENSATION

The mechanisms called into action by a decrease in the ratio of actual to optimal cardiac output are effective in increasing venous return. When heart failure and rise in diastolic pressure in the ventricles are minimal, this suffices to raise cardiac output by increasing diastolic filling. At longer fiber length, as Starling demonstrated, the ventricle releases more energy and does more work at the ensuing systole. In advanced failure further dilatation may actually decrease stroke volume, and in such instances cardiac output falls on exercise or on lying down and rises following venesection. These patients are also the ones in whom great improvement, with decrease in heart size, occurs if they learn to live on diets low in sodium and protein. If metabolism is lowered and compensatory rise in blood volume is prevented, such patients are greatly benefited.

As failure progresses, output is not restored to optimal levels by rise in venomotor tone and in blood volume. In veins and ventricles, as in a rubber balloon, stretch decreases as pressure rises. At high levels of pressure, in the ventricles and the venous reservoirs, relatively small changes in volume occur with large changes in pressure. Where normally 60 cu. cm. can be transferred from auricles and veins to ventricles in early diastole with a rise in ventricular and fall in venous pressure that totals 10 mm. of mercury or less, at high pressures in a heart of the same size, 25 cu. cm. transferred from venous reservoir to ventricle will equalize pressure in the two chambers, with pressure changes totaling 20 mm. of mercury or more. (See the accompanying chart.) Only by decided hypertrophy of the ventricles and the venous reservoirs can a normal stroke volume be restored to an inefficient overburdened ventricle. This type of hypertrophy does occur and explains why, in chronic heart disease, capacity for exercise may be restored to a considerable degree even though venous pressure is decidedly elevated and the shadow of the heart is abnormally large. The capacity for coronary flow increases with the ventricular weight, as long as atherosclerosis spares the large arteries.[17] Such a heart shows true compensation; the extrinsic mechanism has furnished an adequate blood volume and venous pressure, the vascular bed and heart have provided capacity to permit adequate stroke volumes at high ventricular diastolic pressures; high diastolic pressures in the ventricle evoke adequate systolic emptying. Cardiac output now more nearly approaches optimal under basal conditions or even under stress. Renal and splanchnic blood flow approach normal levels, salt and water excretion balance ingestion, and the patient's circulation is reestablished in spite of a weakened and overburdened heart. Further stress and weakening produce new episodes of failure, and eventually recompensation fails.



Volume-pressure relationships of the ventricles and venous reservoirs: The horizontal lines show the pressure changes recorded in the normal subject, the vertical lines those recorded in severe heart failure, during the equalization of auricular and ventricular pressures occurring in early diastole. The stroke volume in the normal is taken as 75 cu. cm. with 80 per cent of filling occurring in early diastole. The volume noted for the case of failure is that which would be possible without hypertrophy: approach to normal stroke volume is made by hypertrophy of the ventricle and the venous reservoir.

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[16] DiPalma, J. R., and Kendall, P. E.: The Relationship Between Blood Volume and Blood Specific Gravity in the Recovery from Cardiac Decompensation, J. Lab. & Clin. Med. **29**: 390-397, 1944.

[17] Dock, W.: Capacity of Coronary Bed in Cardiac Hypertrophy, J. Exper. Med. **74**: 177-186, 1941.

But intervals of years, or even decades, of effective living may pass between one episode of failure and the next. During all this time, heart volume, circulation time and venous pressure are abnormal and vital capacity is low. Yet dyspnea at rest is absent, dyspnea on effort is moderate, and edema does not develop on diets reasonably low in salt. Recovery from cardiac insufficiency occurs when heart volume, vital capacity and venous pressures return to normal; compensation occurs when the patient learns to live on satisfactory terms with a dilated and hypertrophied heart.

### SUMMARY

The adaptations of the body to reduced venous return to the ventricles (shock, pericardial embarrassment) or to diminished force of ventricular beat (myocardial failure) are numerous and effective. In some cases, decreased utilization of blood by the body is a striking feature, output remaining low and the tissues adapting themselves to low oxygen and high carbon dioxide tensions. In others, where peripheral vasodilatation is essential to maintain life of the tissues, blood flow may be twice normal under basal conditions in heart failure. Then again, high arterial pressure may be maintained in spite of cardiac insufficiency. In all cases venous tone rises, the renal and splanchnic blood flow falls, the blood volume and extracellular fluid volume increase. Whether rise in venous tone or in blood volume is most pronounced depends on whether the body can be satisfied by an output less than normal and a sluggish return flow through wide venous channels (low output failure) or whether arteriolar vasodilatation raises venous pressure and permits rapid return flow through narrow channels (high output failure).

To adapt itself to high arterial pressures the ventricle hypertrophies in thickness, with little change in capacity; the reverse is true in hypertrophy to maintain high outputs at normal or low diastolic pressures.[18] To adapt to high ventricular and venous pressures, when muscular efficiency is low, the ventricles and the auricles and great veins grow to be exceedingly capacious; they may finally maintain a normal stroke volume with the heart and venous reservoir three to ten times as capacious as normal.

These adaptations would be rather effective if the patient remained on a diet with a normal mammalian salt intake (less than 1 Gm. a day) and as long as he did not lie on his back. If he does the latter, pulmonary edema may develop, which can scarcely occur when the heart and lungs maintain the relations normal in mammals, the heart lower than the lungs in the gravitational field.[18] Man has not yet succeeded in effecting circulatory adaptation in the postures and on the diet which he has taken up recently in his evolutionary history. Chronic heart failure, as seen clinically, represents a combination of superb physiologic response to stress, with the breakdown of this mechanism due to man's wilful insistence on a perverted diet rich in salt and his preference for the supine rather than the prone posture when at rest. It probably will prove more effective, in the long run, to develop agents which permit man to eat his salt and not absorb or retain it, than to try to cure him of his acquired taste. And it is much easier to raise the head of his bed 18 inches (46 cm.) than to teach him to sleep on his face or propped up on pillows.

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18. Rytand, D. A., and Dock, W.: Experimental Concentric and Eccentric Cardiac Hypertrophy in Rats, Arch. Int. Med. 56: 511-520 (Sept.) 1935.

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## MEDICINE AND THE STATE

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When you paid me the honor of asking me to present this lecture, you will remember that I did not delay in my acceptance of your invitation. Aside from the distinction enjoyed by your society, the realization that I was following men like Thayer, William Mayo, Charles Martin, Walter Cannon, George Minot and Ludvig Hektoen, who, in addition to their eminence in medicine had been, and are, much esteemed friends, gave me a thrill of pleasure. The pleasure, however, was tinged with fear—that I should prove a very unworthy follower of colleagues whose names will pass into history as having contributed to the greatness of medicine.

To some who listen to me and wonder that I choose so topical a subject for my address as the relations between the doctor and the state, I would excuse myself by saying that I believe the present situation in respect of these two important elements in society today to be of vital importance to the progress not only of medicine but of civilization itself. There has been *no single* factor in the evolution of the human race, whether regarded physically or morally, so great as medicine. To substantiate this claim would take me much too far afield.

I am concerning myself this evening with the interaction of medicine and the state *in their joint effort* to help forward human progress through a scheme of *medical care for the people.*

### REQUIREMENTS FOR IDEAL MEDICAL CARE

In the first place, therefore, I suggest that we define our needs in regard to an ideal scheme of medical care. This is not really very difficult.

1. We must help the fit to remain fit, by "keeping the ring" for them and by preserving the amenities. There was formerly an "occupational" fitness but this has seriously diminished, largely as the result of urbanization of great numbers of our citizens. We must also help the near-to-fit to be quite fit. This does not require artificial means, because health is a natural thing—Nature tends that way if she is given a chance.

2. We must raise the general standard of fitness (i. e., health) by correcting certain tendencies toward lowering it which are inherent in modern life. The life led by many clerks, miners and school children impedes natural functions. More important still, we must provide enough of the proper food for those millions of our fellows who do not at present get it.

3. We must do our utmost to control disease due to preventable agents. This means research and an army of well trained medical officers of health to implement the knowledge that we have and are yearly increasing.

4. We must cure or alleviate disease when it occurs. This means an army of well qualified doctors for attendance on the family in its homes, and well equipped hospitals for institutional treatment.

These are our needs, and they should be considered in that order—more and more in that order as civilization progresses and as the grosser infections come under control.

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Chairman of the Fellowship for Freedom in Medicine, London.

William W. Root Lecture, delivered at the Annual Dinner of the Alpha Omega Alpha Society, Atlantic City, N. J., June 9, 1949.

### PRINCIPAL FACTORS IN MEDICAL CARE

In trying to satisfy these requirements we are all concerned, not merely the doctor, the medical officer of health and the administration, but the people themselves. You cannot make people healthy any more than you can make them good.

Of the citizen I do not speak today, important though his contribution is. The second party in the scheme is the doctor, the "health man" who makes contact with the citizen and "gets the thing across." He is the most important part of the medical care system, because it falls to him to diagnose the citizen's degree of health or, alternatively, the nature and degree of the citizen's deviation from health. This function of the doctor cannot be usurped by any one else. The doctor is right and is acting in the public interest in zealously guarding this privilege—great obligations are laid on him. The fact that he enjoys public confidence to the extent that he does is proof that in the main he carries out these obligations.

The third party to the contract is the state. The function of the state in regard to medical care is to see that the whole gamut of knowledge and skill, which is resident in the physician, gets as unobstructed a channel as possible between it and the citizens. The state should help in the construction of the machine of medical care but should not itself run the machine. This is the job of the expert, and the expert is the doctor.

### PRESENT THOUGHT ON NATIONALIZED MEDICINE

With these preliminary and basic considerations let me turn to what I have called the present situation with regard to medicine and the state.

President Truman's now historical message to Congress on April 22 last opened with the following pronouncement:

> In a special message to the Congress on November 19, 1945, and in a number of messages since that date, I have recommended the enactment of comprehensive legislation to improve the health of the people.
>
> The issues involved in these recommendations have been debated all over the country. . . . There has been increasing recognition of the need for positive, planned action to bring adequate health services within the reach of all our people. . . .
>
> Legislation has already been enacted which is helping substantially to provide better health services and medical care.
>
> However, the action thus far taken falls far short of our goal of adequate medical care for all our citizens. If we are to deal with the problem realistically and in its true dimensions, action is required on a broader scale. . . .
>
> Now that we have the medical knowledge that can bring good health within our reach to a degree heretofore undreamed of, we must improve the means for putting that knowledge to practical use. Good health is the foundation of a nation's strength. It is also the foundation upon which a better standard of living can be built for individuals. To see that our people actually enjoy the good health that medical science knows how to provide is one of the great challenges to our democracy.

The President proceeded to outline in very broad terms the desiderata in respect to an extension of medical care for the whole nation and considered that this can be accomplished only by a method of compulsory health insurance.

Neither of the two terms with which we in Great Britain have become so familiar—socialized medicine and nationalized medicine—occurred in the President's message. This omission may, of course, have been deliberate. In a way, the omission of the term socialized medicine may be a good thing, because (as I have so often pointed out) it is an entirely ambiguous expression. It may merely mean making medical care available to every citizen, a purpose to which all of us with a humanist outlook must surely subscribe; or it may mean nationalizing medical practice—that is, the state taking control of the medical profession in all its branches and all the mediums through which it operates.

On July 5 last, medicine was actually nationalized in Great Britain as the result of the passing of an Act of Parliament so framed that the minister of health could, by regulations under the Act, direct the whole medical care of the country, whether operating through institutions such as hospitals or through physicians engaged in private practice. His powers under the Act are almost unlimited. I consider it vital that this distinction between socialized medicine and nationalization of medicine be made clear to the public. My own country was misled into thinking that what was intended was the socialization of medicine in the first sense I have attributed to the term, whereas what the government had in view was the nationalization of medicine in the same sense as it had nationalized the mines and the railways and now proposes to nationalize steel.

To return to the President's message, men of good will hailed this as indicating an earnest endeavor to take social betterment, through medical care, a long step forward; the cynic saw in it little else than one more example of political exhibitionism.

It does not really matter whether the message was an expression of the Messiah complex or of political expediency; what matters is that it has caught the public imagination and that the citizen has tuned in to the idea and is quite likely to ask for some practical fulfilment of the implied promise. And not only has it appealed to the man in the street—who, after all, when benefits are offered and no immediate payment of a proportionate kind is asked in return, is very prone to join that curiously mixed group which the scriptures tell us are "never satisfied"—but to more responsible folk. When I was in Washington recently, I found my colleagues of the Food and Agriculture Organization of the United Nations were also intrigued, as it were, by a presidential slogan; they were talking in terms of point 4 of the Inaugural Message and seemed to have forgotten that at Hot Springs and at Quebec the formula which guided their efforts was even wider in its scope and was several years older. This formula committed "the Nations accepting the Constitution of the United Nations to a determination to promote the common welfare—for the purposes of raising levels of nutrition and standards of living," and so forth.

There was nothing really new in all this. It was rather like opening a scientific meeting by reading the Sermon on the Mount—and why not, since science exists for man and not man for science? What is new is the emergence of the individual, an event which is the real crux of what has been called the changing order in society, and which we discussed so fully at the centennial of the New York Academy of Medicine in 1947. This emergence has synchronized with a number of profound alterations in the way of living and in social attitude. Among these are industrial expansion, poverty, the rise of big business and big government, the arrival of social service and the development of voluntary health insurance plans.

### EMERGENCE OF THE INDIVIDUAL

There are two even more basic elements in this concentration on the individual which is the fundamental feature in the changing order. The first is recognition of the fact that the citizen himself and not his goods and chattels, or the want of them, constitutes the real wealth or poverty of a nation. Thinking men have told us this again and again. (You remember the old cliché, "The health of its citizens is a nation's greatest asset.") But we did not listen until dire national peril was upon us. During the recent war we passed our men and women through a finer comb than we had ever done before, and now, in the postwar era, manpower is the commodity we find in shortest supply.

The second basic element leading to the emergence of the individual is his own spiritual evolution. That the evolution of personality proceeds along lines which tend to help humanity forward is generally accepted. In the course of this evolution the individual very reasonably says to medicine, "What can you do for me?"

Now, although it is true that, being based on science, medicine to be really progressive should command a degree of autonomy—of freedom—there is agreement that its full powers should be applied to the attainment of the health and happiness of the individual. In so far as the state acts wisely in the interests of the citizens, this desideratum has always been recognized. At first it was recognized only dimly, but later more clearly, so that there has today opened up for the statesmen, the sociologist and the physician a large field for their inquiry and their action, and this field is common ground. The man of medicine must not spend all his time in this field; he must go apart, whether in the laboratory or at the bedside, or, like Harvey, walk under the trees rapt in thought so that by observation, by experiment and by contemplation he may keep medicine dynamic. For it is through medicine that the doctor makes his contribution, a contribution which no one else can make. On the other hand, to stand aloof from the work going on in this same field is to do a disservice not only to society but to medicine itself; but to become entirely absorbed in it is to do a disservice no less serious. Sigerist said:

"The history of the medical ideal is the history of human society. Seeing that the position of the sick in society differs with every cultural epoch, the demands upon the doctor and his position in the social structure change constantly; but though they differ in detail they remain the same in their fundamental claims. The good physician was at all times the physician who felt himself bound by the medical ideal of his time. Men like Hippocrates, Sydenham, Laennac, Billroth and Osler were therefore great physicians and will always occupy a special position in the history of medicine. A clear understanding of the prevailing medical ideal is of great importance."

Can we achieve this end, about which we are all agreed? And, if so, how? Let us suppose that we in Great Britain had been given the chance of helping the state by making constructive suggestions—what would these have been? In the first place there is surely consensus concerning certain basic desiderata: 1. Medical care should provide everything that science can offer toward the preservation of health and the cure of disease; the whole corpus of knowledge, as it is termed, must be implemented in the citizen's interest. 2. Then surely it is agreed that these benefits should be available to the entire population. 3. Seeing that the general public has a vital interest in our plans, it should be adequately represented in their formation. 4. But inasmuch as it is the doctor who must render the medical care, he should play a dominant part in the preparation of the scheme he will be called on to carry out.

If, as I say, we had been consulted as to how this ideal could be achieved we should have emphasized our belief that gradual extension and improvement of medical care is preferable to revolutionary changes and that, while recognizing the responsibility of the government for the citizen's health, we should have warned the state that sweeping legislative action would defeat its own purpose by impairing the spirit and quality of a service which is essentially individual and personal.

### CRITERIA FOR ACHIEVEMENT OF THE MEDICAL IDEAL

As to the conditions necessary to bring about the desiderata I have enumerated, there are certain paramount criteria. The gist of these is that the quality or standard of medical care must be preserved; provision of public health services is, of course, essential; then there must be effective use of hospitals with adequate facilities; trained professional and nonprofessional personnel is a *sine qua non*; organization and coordination of physicians through the extension of medical groups and health centers must be encouraged; voluntary prepayment plans should be supported; extensive education for both physicians and the public is required, and, finally, government help, preferably by grants in aid, would be necessary. Indeed, a method of grants in aid would seem to offer the brightest promise, as far as help by a central authority is concerned.

We must realize that the practical expressions of unplanned energies are often cumbersome and wasteful. This is the price we pay for highly individualized societies. We began doing things many years ago; we did some of them so well that it has never been considered helpful to scrap them. There are parts of the machinery of our health services which work perfectly; some units stand out as pieces of perfect organization and efficiency—the large voluntary teaching hospital; many special hospitals; the well-managed cottage hospitals, as we term them in Britain; some of our public health services, and our Medical Research Council. A wise state, on examination of these units, will not scrap them at sight but, realizing that it cannot hope to do the thing better (or as well), will stand by them, will help them and will integrate them in a general scheme of medical care.

One other thing; to make medicine a complete science in the service of man, we must see that it infiltrates the important and now more clearly perceived sphere which lies between that in which the diseases of the individual patient are treated by the individual physician and the sphere in which the preservation of the public health is achieved by the medical officer of health. This largely untilled field includes all the environmental factors which influence health and happiness: conditions of work, home life, the sense of security or insecurity. In short, as Professor Ryle has stated: "Our next advance (in medicine) will be . . . concerned with causes, but with the ultimate, rather than the intimate, causes of disease." Professor Ryle's term "social pathology" is an apt designation for this work. A study of the environmental factors in the etiology of disease was overdue; it is high time that they were studied and the results statistically analyzed.

That, I think, is how we should have put the case for medicine in its relation to society. But we should fail in an important part of our duty if we did not, at the same time, warn the state that if it did not attend to the more basic needs of the citizens our direct contribution from medicine would avail little. By basic needs I mean: a sufficient amount of the proper food, suitable shelter and clothing, a satisfactory job of work, access to fresh air and sun, reasonable leisure and the amenities of life. The doctor must stake out the citizen's claim in every one of these needs. We physicians must lead in all this; we must guide the politicians, since they cannot act without expert help; we must keep the citizen's end up, since he learns to rely on us for support.

But suppose the politician won't be guided? Suppose it is as Swift wrote in a letter of Pope: "Although I have known many great Ministers ready enough to hear opinions, yet I have hardly ever seen one that would descend to take Advice; and this pedantry ariseth from a maxim which they themselves do not believe at the time they practice it, that there is something profound in politics, which men of plain honest sense cannot arrive to." In that case the physician has no alternative but to appeal to public opinion, continuing to serve his patient in the manner which he believes to be in the patient's best interest.

### THE NEED FOR UNITY OF ACTION

That, I say, is how we should have stated our case. And, as far as we had a chance of so doing, we in Britain did. It was a pity that we had no machinery by which we could express ourselves as a corporate whole. We had no actual guild. Lacking unity and scattered in different camps, we were taken off our feet. Precipitate action was the order of the day. We were bustled into premature action against our better judgment. The rank and file of the profession were maneuvered into acquiescence by economic pressure and not from conviction. Only unity could have saved us, and unity was what, at the critical moment, we lacked. We forgot that we were experts and that only as experts should we agree to cooperate. We moved from an attitude of dignity and calm detachment from political clamor to one of subservience to a doctrinaire socialist adventure. We ceased to be masterpieces and became pawns in the game. And so we have become what we vowed at all costs we never would become—mere servants of the medical bureau. The whole philosophy of the physician-patient relation has changed. We are no longer in control. Instead of saying "What is troubling you; tell me, so that I may help you," we say "What is it that you want?"

Those who have nationalized medicine in Great Britain call us, who have pleaded for evolution rather than revolution, reactionaries. But it is they who are the reactionaries. They have put back the progress of medicine, both in its art and its science, a hundred years. Medicine had found that the close relation of doctor and patient was the sine qua non in medical care. For the time being this has been to a large degree sacrificed.

You in America can, if you will, escape this peril. You have time. I am old enough not to be charged with egregiousness if I offer my colleagues here a warning and express a hope. Do not risk a head-on collision with the state; if you do you will lose. Accept the challenge that is implied by the President's message. "Make medicine available for every citizen," he says. "Certainly," you should say, "that is what medicine is for. But what medicine? Our medicine, the medicine that results from tradition, long training, knowledge of our fellow man and the creaming off from science of the best that it offers to the physician? Or a stereotyped medicine of the state, which is but a bastard sort of medicine?" Surely, there can be only one answer. It is easy to level down; this can be done almost by a stroke of the pen. It is difficult to level up; this takes time and labor and much thought. So, I say, do not move away from general principles; they are the only things which ultimately triumph. And what are these general principles? Expert knowledge, detachment from politics, public confidence and courage; these are the essentials that enable medicine to make its contribution to the common health and the common happiness. You have in this country fought a good fight against the quack doctor in private life. You have a harder fight before you—the fight against the quack in public affairs. Put the case for medicine before the Public,—put it clearly, modestly and briefly. This is their case as well as ours, it is even more their case than ours. I believe that, with vision, you will succeed. If you fail, if the public will not be saved, well, in the vernacular, "that is just too bad." It will be a depressing thought for me, with so many good friends among you, that, while you are a country of infinite capacity and infinite ingenuity, you are yet a country of infinite credulity!

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# RATE OF BLOOD FLOW THROUGH STANDARD GAGE NEEDLES UNDER PRESSURE

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The recent war coupled the great need for the rapid transfusion of blood with the need for readily available supplies of blood and plasma. The use of large needles and methods of pumping these fluids intravenously under positive pressure resulted in the transfusion of previously unheard of quantities at almost unbelievable rates of flow. Most civilian hospitals are well aware of these methods, and several articles have been published with standard technics. Reports of the use of large amounts of blood are now a daily occurrence.

Except in emergency rooms where treatment for traumatic accidents is frequent, the main need for the rapid transfusion of large quantities of blood exists almost solely on the delivery floor and in the operating room. It is still difficult, even in many well equipped institutions, to obtain the apparatus for supplying blood under pressure and needles of sufficient size for the rapid transfusion of blood.

Jean Poiseuille, about the year 1800, expressed the flow of incompressible liquids through tubes of small bore in the absence of turbulence as:

$$q = \frac{pr^4}{-8nl}$$

where q is flow in cubic centimeters per second, p is pressure in dynes per square centimeter, r is the radius of the tube, n is the viscosity and l is the length in centimeters.

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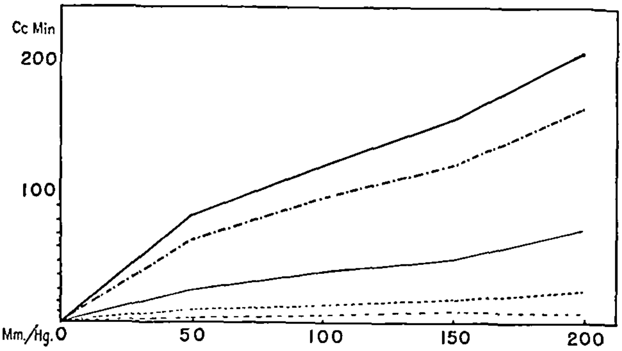
Reviewing this equation roughly, one may say that with a given transfusion system, and using material of the same viscosity:

$$q \text{ varies as } pr^4$$

This is of significance in that although the flow is shown to increase directly with the pressure, it increases directly with the fourth power of the radius of the end of the tube.



The rate of flow in cubic centimeters of blood per minute (vertical column of figures) through standard gage needles under the stated pressure. (The horizontal row of figures shows the pressure in millimeters of mercury.)

This paper is presented to emphasize the necessity for including in transfusion sets, as standard equipment, the materials for the rapid transfusion of blood.

## METHODS AND MATERIALS

The materials used were standard equipment modified for pressure transfusion administration. These consisted of a Baxter 19-R Y-type recipient set, blood flasks, B-D needles numbers 22 (0.016 inch, or 0.041 cm.), 20 (0.023 inch, or 0.058 cm.), 18 (0.033 inch, or 0.084 cm.), 15 (0.054 inch, or 0.137 cm.) and 13 (0.071 inch, or 0.180 cm.), an infusion stand and a mercury type sphygmomanometer with a suitable tubing arrangement for application of measured pressure to the blood flask. The fluid used in the flask was whole blood, which was in a good state of preservation.

Table 1.—*Relationship Between Blood Flow and Pressure Applied to the System*

| Needle Size | Blood Flow (Cc. per Minute) According to Pressure | | | |
|---|---|---|---|---|
| | 50 Mm. Hg. | 100 Mm. Hg. | 150 Mm. Hg. | 200 Mm. Hg. |
| 22 | 4.75 | 6.75 | 7.0 | 8.6 |
| 20 | 13.25 | 18.5 | 24.0 | 30.0 |
| 18 | 32.6 | 44.0 | 54.0 | 74.0 |
| 15 | 68.0 | 95.0 | 135.0 | 164 |
| 13 | 84 | 122.6 | 154 | 208 |

Table 2.—*Relationship of Change at Constant Pressure of Inside Diameter of Needle to Change in Flow**

| Needle Size | Increment in Bore | Increment in Flow |
|---|---|---|
| 20 | 1.4 times | 2.8 times |
| 18 | 2.0 times | 7.0 times |
| 15 | 3.4 times | 16 times |
| 13 | 4.4 times | 18 times |

* Bases of comparison are the inside diameter of the 22 needle and flow of 4.75 cc. per minute at a pressure of 50 mm. of mercury.

The apparatus was set up as if for pressure transfusion, with rubber reinforcements applied at weaker points to protect against disruption. The blood flask was placed at a level 28 inches (71 cm.) above the needle adapter. Needles of the various sizes were fitted to the needle adapter, and flow rates of fluids throughout the system were recorded with pressures of 50, 100, 150 and 200 mm. of mercury.

Two readings were obtained at all pressures for each type of needle on three separate blood samples. The average obtained from the series is presented in the charts.

## RESULTS

Table 1 and the chart show the rates of flow as recorded by the equipment described, with needles varying in size from 22 (0.016 inch [0.041 cm.]) to 13 (0.071 inch [0.180 cm.]), with pressures varying from 50 to 200 mm. of mercury.

It is noted that the flow increases directly with pressure and becomes doubled with an increase in pressure of four times in needle size from 22 to 18. With the large bore tubing, the flow at 200 mm. of mercury of pressure is approximately 2.5 times that at 50 mm. of mercury of pressure.

The most obvious observation is not the increase in flow with increase in pressure, but the vast difference in flow occurring from smaller to larger needles. Table 2 shows the increase in flow at a constant pressure with increasing diameters of needles.

The largest increment in flow occurred between the 18 needle and the 15 needle, where the diameter changed 1.4 times but the flow was increased 9 times.

## COMMENT

It may be seen from the tables and the chart that the use of a pump except on an exceedingly small bore needle (specifically, 22) increases the flow through that system linearly and roughly in proportion to the increment in pressure. Viscosity effects and eddy currents produced by irregularities of bore of the system undoubtedly account for the loss in flow over the theoretical values. The most striking difference noted was the sudden increase in flow in changing from an 18 to a 15 needle, even without pressure other than the force supplied by gravity (roughly taken as 50 mm. of mercury).

There are objections to the use of a needle of this large bore, but for the most part they are theoretical and greatly outweighed by the advantages. Objections given are: (1) difficulty in insertion in patients with small or collapsed veins, (2) unavailability of such needles in standard equipment and (3) the danger of overloading the right side of the heart with rapid inflow of fluid. In patients with small veins, when no real reason for rapid transfusion is evident, a smaller bore needle may be substituted until the need for rapid transfusion is imminent. In patients with collapsed veins due to shock, there should be no quibbling—the largest bore needle that can be insterted into the vein should be used and a cut-down made of large veins with the insertion of a cannula effected without loss of time.

The last objection, that of overloading the right side of the heart with large amounts of blood, is valid only in patients not in shock or whose circulating volume has not been depleted. *It is true that blood being pumped* into a normally circulating volume at the rate of 60 cc. per minute may cause right-sided cardiac failure, or in patients with myocardial damage this may be a valid contraindication even in the presence of mild shock. There is no reason to believe that pulmonary edema from overloading the circulation can be produced in patients with normal cardiovascular systems who have lost blood rapidly.

### CONCLUSIONS

When the need or possible need for the rapid transfusion of blood exists, a transfusion set which can constantly infuse large quantities of liquid should be utilized. The effect of rapid blood loss may be minimized by the application of pressure within physiologic limits and the use of needles of sufficient bore to allow infusion of large quantities of blood. Under the conditions of this experiment, it would seem that the utilization of pressure from 100 to 200 mm. of mercury on the transfusion system and 15 gage needles will suffice to transfuse blood at a rate sufficiently rapid to meet all but the most severe and sudden types of blood loss.

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# CLONORCHIASIS IN THE UNITED STATES

## Report of Four Cases

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Human infection with Clonorchis sinensis (the Chinese liver fluke or the Oriental bile duct fluke) has been encountered infrequently outside of the Far East. Reports in Western medical literature deal largely with the infection in Chinese and Japanese who have emigrated.[1] However, Binford[2] reported 4 instances of clonorchiasis in leprous Hawaiians; the disease was contracted, presumably, by the ingestion of fish imported from China. Howard[3] observed the disease in an Englishman who had never left Great Britain.

During the past eighteen months, in the course of routine examinations for intestinal parasites, we detected the ova of C. sinensis in the stools of four Caucasians living in New York City. These persons had come to the United States from Shanghai, China, where they had lived for several years. To our knowledge these are the first cases of this disease among members of the white race to be observed in this country. The discovery of these cases is another example of the global dissemination of regional diseases by the movement of populations as a result of the last war. It is likely that other persons infected with C. sinensis are already in our midst or will live in the United States in the future. This possibility has been favored by the presence of our military forces in China, Korea and Japan, the principal endemic foci of clonorchiasis. In fact, a recent report stated that this disease was observed among American military personnel in China.[4] It is the purpose of this communication to present clinical data obtained in the study of the 4 cases of infection with Clonorchis and to review briefly the principal epidemiologic and clinical features of the disease.

### GENERAL CONSIDERATIONS

*Geographic Distribution.*—Clonorchiasis is encountered chiefly in China, Japan and Korea; it occurs also on the island of Formosa and in French Indo-China.[5] The heaviest incidence is in South Central China, in Kwangtung Province, where 80 per cent of the population of Canton were found to harbor the parasite.[5] In Hong Kong 13.9 per cent of the postmortem examinations in one survey revealed infection with Clonorchis.[6] Recent studies indicate that the Shanghai district is an important focus of this disease.[7] Clonorchiasis occurs throughout Japan, with the heaviest foci of human infection in the prefectures of Okayama, Saga, Hyogo and Saitama. In 1938 a survey of intestinal parasitism in Japan revealed that 0.26 per cent of 346,353 persons found to be carriers of the eggs of parasites harbored liver flukes.[8] In Korea this disease is widespread. The incidence is greater in the southern part of the country, especially in the lowlands. In certain regions 10 to 25 per cent of the persons examined in surveys were found to be infected.[9]

*Epidemiology.*—Clonorchis sinensis is a small trematode (fluke) which resides in the biliary passages of fish-eating mammals. It was first described in man by McConnell in 1875 at the autopsy of a Chinese in Calcutta.[10] Our knowledge of the life cycle of the fluke and the manner of human infection is due largely to the studies of Faust and associates.[11] The trematode ova are passed in human or animal feces and, on contact with fresh water, liberate free swimming, ciliated miracidia which parasitize various species of small snails, Parafossarulus striatulus (China), Parafossarulus var. japonicus and Bulinus fuchsiana (Japan). Within the snail they give rise to sporocysts. Finally, free-swimming cercariae are liberated from the snail and live for twenty-four to forty-eight hours. If the cercariae reach a suitable fresh water fish, they penetrate the musculature and encyst there as metacercariae. After ingestion of the fish by man, the encysted metacercariae give rise to the adult worms. About forty species of Oriental fish belonging to the families Cyprinidae, Gobiidae, Anabantidae and Salmonidae have been reported as naturally infected.[5]

The ingested metacercariae excyst in the duodenum of man, and the larvae migrate to the common bile duct and the intrahepatic biliary channels, where they mature into adult worms in one month. The adult flukes cannot withstand the action of the intestinal juices. The ova, deposited in the biliary passages, find their way to the intestinal tract either directly or after being

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From the medical services and the Department of Bacteriology of the laboratories of Mount Sinai Hospital.

1. (*a*) Gunn, H.: Clonorchis Sinensis in Orientals Arriving in the United States, J. A. M. A. **67:** 1835-1836 (Dec. 16) 1916. Shattuck, G. C.: Clonorchiasis in Boston, Boston M. & S. J. **189:** 165-166, 1923. Reed, A. C., and Wyckoff, H. A.: Cure of Clonorchiasis by Tartar Emetic, Am. J. Trop. Med. **6:** 115-117, 1926. (*b*) Swalm, W. A.; Gault, E. S., and Morrison, L. M.: Rare Case of Primary Liver Carcinoma in Liver Fluke Disease (Clonorchis Sinensis), Am. J. Digest. Dis. **4:** 789-792, 1938. (*c*) Strong, R. P.: Stitt's Diagnosis, Prevention and Treatment of Tropical Diseases, ed. 6, Philadelphia, The Blakiston Company, 1942, vol. 2, pp. 1436-1442. (*d*) Favorite, G. O., and Horneff, J. A.: Clonorchis Sinensis Infestation of the Liver, Hahneman. Monthly **79:** 292-297, 1944. (*e*) Helwig, E. B., and Brown, R. G.: Clonorchiasis: Report of Two Cases, Am. J. Clin. Path. **16:** 714-720, 1946.

2. Binford, C. H.: Clonorchiasis in Hawaii: Report of Cases, Pub. Health Rep. **49:** 602-604, 1934.

3. Howard, S.: Rare Appearance of Clonorchis Sinensis in England, Post-Grad. M. J. **16:** 125-127, 1942.

4. Crawford, G. E.: An Unusual Case of Clonorchiasis with Marked Eosinophilia and Pulmonary Infiltrations, Am. J. Med. **5:** 259-267, 1949.

5. Simmons, J. S.; Whayne, T. F.; Anderson, G. W., and Horack, H. M.: Global Epidemiology: A Geography of Disease and Sanitation, 1944, Philadelphia, J. B. Lippincott Company, vol. 1.

6. Uttley, K. H.: On the Incidence of Clonorchiasis as Met with in Post-Mortem Examinations in Kowloon, Hong-Kong, Chinese M. J. **49:** 1267-1268, 1935.

7. Komiya, Y., and Tajimi, T.: Study on Clonorchis Sinensis in District of Shanghai, J. Shanghai Sc. Inst. (sect. 4) **5:** 91-106, 1940. Crawford.[4]

8. Medical and Sanitary Data on Japan, United States War Department, (TB Med 160), Washington, D. C., Government Printing Office, May 1945, pp. 84-85.

9. Epidemiology of the Diseases of Naval Importance in Korea, NAVMED 1289, United States Navy Department, Bureau of Medicine and Surgery, Washington, D. C., 1946, pp. 30-31.

10. McConnell, J. F. P.: Remarks on the Anatomy and Pathological Relations of a New Species of Liver Fluke, Lancet **2:** 271-274, 1875.

11. Faust, E. C., and others: Studies on Clonorchis Sinensis (Cobbold), Monograph Series, no. 8 of the American Journal of Hygiene, Baltimore, American Journal of Hygiene, 1927, p. 284.

stored in the gallbladder. In heavy infections ova are also deposited in the pancreas.[12] The entire life cycle from ovum to adult fluke is completed in three months.

In a study of the fish-eating habits of Chinese who harbored C. sinensis,[11] it was observed that 58 per cent ate raw fish prepared in salads, 18 per cent ate raw fish dipped in boiling water, broth or congee (rice gruel), 14 per cent ate the fish slightly fried, 6 per cent ate it dry and 4 per cent cooked the external part leaving the inside uncooked. The 4 infections reported by Binford among leprous Hawaiians [2] were acquired, presumably, by the eating of imported fish. Howard's case in England [3] probably involved infection in this manner. In a case recently reported by Crawford [4] the patient ate fish at a Chinese banquet on only one occasion.

In the Chinese province of Kwangtung, the principal focus of the disease, the raising of fresh water fish in ponds is an important industry, and night soil, which is considered necessary for the development of the fish, is fed regularly to them. This practice, coupled with the fact that thin slices of raw fish are a popular delicacy, favors the widespread dissemination of the disease.[5]

In China and Korea the spread of the disease is favored by the infection of cattle, dogs and cats. Twenty-five per cent of the dogs in Peiping, China, and 8.5 per cent of the street dogs in Mukden, Manchuria, were found to be infected. Rats may also serve as reservoir hosts. The presence of the infection in animal hosts in North China, Manchuria and Korea is an indication of the danger of infection when uncooked or insufficiently cooked fish are eaten in these areas.[5]

*Pathology*.—The majority of adult worms live in the large bile ducts with the production of distention, dilatation and eventual thickening of these passages. Hoeppli made a detailed postmortem, histologic study of the livers of 66 Chinese who were infected with C. sinensis but who succumbed to other diseases.[12] He found fibrous thickening and dilatation of the larger bile ducts and increase in the periportal connective tissue in 49 cases. A definite cirrhosis, similar to Laennec's cirrhosis except for the presence of the parasite, was noted in only 1 case. In addition, Hoeppli observed proliferation of epithelium of the bile duct, eosinophilic infiltration and fatty changes in the hepatic cells. Involvement of the pancreas occurred in 11 per cent of the cases.

Helwig and Brown,[1e] in a study of 2 cases in which necropsies were performed, described fibrous connective tissue surrounding the dilated hepatic ducts. The spaces around the ducts were infiltrated with inflammatory cells, including eosinophils, neutrophils, moderate numbers of lymphocytes and plasma cells. The adult flukes were found in the dilated hepatic ducts but not in the gallbladder, cystic or common bile ducts. Miyaka found an adult worm in the center of a gallstone.[13] Otto [14] has described a catarrhal cholangitis associated with the occlusion of the larger biliary passages by sticky masses of Clonorchis ova. The reports of Katsurada, Mebius and Yamigima [13] indicate that in long-standing cases with repeated heavy infections, cirrhosis of the liver is not rare. If the disease is progressive, ultimately a true cirrhosis results in shrinkage of the liver with alterations of the architectural pattern, splenomegaly and ascites. The observations are those of cholangitic biliary cirrhosis. The patient of Favorite and Horneff [1d] had edema and ascites for six years, followed by dyspnea and cyanosis; at necropsy the observations were indistinguishable from those of Laennec's cirrhosis, except that the bile ducts were distended with numerous trematodes. Bercovitz [15] found a fatty cirrhosis in one of his cases.

Those who are most familiar with this disease have suggested that primary carcinoma of the liver may be related in some way to the presence of C. sinensis and the pathologic changes it produces in this organ. Hoeppli [12] has stated that it is the impression of some physicians in China that primary carcinoma of the liver is more frequent in the south of China than in the north and parallels the incidence of infection with Clonorchis, which is greater in the south of China. In a case reported by Swalm, Gault and Morrison [1b] an aspiration of the liver which was performed after death in a patient with clonorchiasis revealed interlobular cirrhosis and primary carcinoma of the liver.

## REPORT OF CASES

CASE 1.—A white Russian woman aged 34 complained of low grade fever for six years. She was born in Manchuria but had lived in China for fifteen years. For ten years prior to visiting the United States she had resided in Shanghai, where she had eaten fresh water fish. In 1942, one year after the onset of a low grade fever, she was told that she had an enlarged liver. In 1943 she had an episode of intense jaundice with dark urine and clay-colored stools. In 1944, because of fever and hepatomegaly, amebiasis was suspected and she was given twenty injections of emetine hydrochloride. Since then she continued to have frequent attacks of dull pain and tenderness in the right upper quadrant of the abdomen and elevations of temperature to 100 or 101 F.

Physical examination revealed a well developed, well nourished white woman in no distress. There were a few spider telangiectases on her cheeks and nose. The lungs were clear. There was a soft apical systolic murmur. The edge of the liver was palpable in the epigastrium. The spleen could not be felt.

The hemoglobin concentration of the blood was 15.5 Gm. per hundred cubic centimeters; the white blood cell count was 5,300. The differential count revealed 44 per cent polymorphonuclear neutrophils, 40 per cent lymphocytes, 4 per cent monocytes and 12 per cent eosinophils. Urinalysis did not reveal the presence of albumin or sugar. Several examinations of the stool by direct saline smear revealed numerous ova of C. sinensis and Trichuris trichiura. A stool flotation test, with zinc sulfate (33.3 per cent solution), was negative for protozoan cysts. The cephalin flocculation test gave a 2 plus reaction. The erythrocyte sedimentation rate (Linzenmeier) was normal. Blood agglutination reactions for Brucella abortus and Brucella melitensis were negative. Oral cholecystography, performed after the administration of iodoalphionic acid (priodax®), revealed fairly good visualization of the gallbladder. There was no evidence of any filling defect in this viscus, and biliary calculi were not demonstrated.

To treat the infection with C. sinensis, the woman was given 60 mg. of methylrosaniline chloride orally, three times a day, in the form of enteric-coated tablets (enseals®). She did not tolerate this medicament well and had to forego it for two or three days at a time because of nausea and diarrhea.

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[12] Hoeppli, R.: Histological Changes in the Liver of Sixty-Six Chinese Infected with Clonorchis Sinensis, Chinese M. J. **47**: 1125-1141, 1933.

[13] Cited by Hoeppli.[12]

[14] Otto, J. H.: Clinical Pathophysiological and Therapeutical Aspects of Human Clonorchiasis, Far East A. Trop. Med., Tr. Ninth Cong. **1**: 543-561, 1934.

[15] Bercovitz, Z.: Clinical Studies on Human Infestation with Liver Fluke (Clonorchis Sinensis), Am. J. Trop. Med. **11**: 43-46, 1931.

However, the use of the drug was associated with a prompt decrease in the number of Clonorchis ova in the stools, and several negative stools were obtained. There was also a decrease in eosinophilia from 12 per cent when the treatment was started to 3 per cent after six weeks. Symptomatically, the patient seemed somewhat better as a result of treatment. The hepatic tenderness disappeared, she had afebrile periods lasting several weeks, and she gained 5 pounds (2.3 Kg.).

On examination of the patient eight weeks after treatment was discontinued, the liver could be felt 1 fingerbreadth below the costal margin. The patient had eosinophilia (5 per cent) and her stools contained ova of C. sinensis.

CASE 2.—A woman aged 25, who had been in the United States for two months, was seen in the outpatient department of Mount Sinai Hospital. Her main complaint was epigastric pain of two years' duration. She was born in Germany, but since May 1939 she had lived in Shanghai. There she often tasted chopped fish prior to cooking it. In 1940 she had intermittent attacks of diarrhea, and she was told that she had "intestinal worms." In 1943 she contracted amebic dysentery, for which she was given emetine hydrochloride.

The recurrent epigastric pain, which had been present since 1946, appeared after meals and radiated to the back. The attacks of pain usually lasted about fifteen minutes. At times they were accompanied by periodic nausea and constipation, anorexia, weakness, insomnia and bitemporal headaches. Prior to hospitalization she had been treated with twelve injections of histidine monohydrochloride (larostidin®) without abatement of her symptoms.

Physical examination revealed a well developed and well nourished woman in no distress. There was tenderness in the epigastrium and in the lower part of the abdomen. The liver and spleen were not palpable. The blood pressure was 90 systolic and 60 diastolic.

The hemoglobin concentration of the blood was 11.6 Gm. per hundred cubic centimeters, and the red blood cell count was 3,560,000. The white blood cell count was 8,050, and the differential count revealed 53 per cent polymorphonuclear neutrophils, 33 per cent lymphocytes, 12 per cent eosinophils and 2 per cent monocytes. The urine was normal, and response to the Wassermann test was negative. The erythrocyte sedimentation rate was 11 mm. per hour (Westergren).

Blood chemical studies revealed an icterus index of 3 units, a negative van den Bergh reaction and a serum bilirubin level of 0.2 mg. per hundred cubic centimeters. Examination of the stool revealed ova of C. sinensis.

Cholecystographic study disclosed a gallbladder with a phrygian cap type of configuration, with good function and without evidence of calculus formation. Roentgenologic study after ingestion of a barium meal did not reveal evidence of abnormality in the esophagus, stomach or duodenum. The lateral aspect of the duodenal bulb was smoothly indented, presumably by the gallbladder.

The infection was treated with enteric-coated tablets of methylrosaniline chloride (60 mg. three times a day) for one month. Unfortunately, follow-up study was not possible.

CASE 3.—A man aged 34 who had been in the United States for three months was admitted to the second medical service (Dr. I. Snapper) of Mount Sinai Hospital because of abdominal distention of three years' duration. He was born in Germany and had lived in Shanghai from 1939 to 1948.

Soon after his arrival in Shanghai in 1939, he suffered from frequent soft bowel movements, on the average of six a day, accompanied by abdominal distention and dull periumbilical pain. There was occasional crampy pain in the right upper quadrant of the abdomen, radiating to the back. In 1944 he became jaundiced during an epidemic of hepatitis in Shanghai, and he had weakness, nausea, fever and clay-colored stools. In September 1946 severe diarrhea developed, and he experienced twenty to twenty-five nonbloody movements daily. On routine examination of the stool ova of C. sinensis were found, and the infection was treated with methylrosaniline chloride. It was stated that the patient had gallbladder disease as well. At that time the white blood cell count was 20,000, with 20 per cent eosinophils. After his arrival in the United States he continued to experience abdominal distention and cramps in the lower part of the abdomen. He stated that in Shanghai he had eaten fresh water fish regularly and that clonorchiasis was widespread there.

Physical examination revealed a well developed and well nourished man. The liver was palpable 1 to 2 fingerbreadths below the costal margin. The spleen was not felt. The blood pressure was 118 systolic and 72 diastolic.

The hemoglobin concentration of the blood was 17.0 Gm. The white blood cell count was 11,400. The differential count revealed 55 per cent polymorphonuclear neutrophils, 31 per cent lymphocytes, 10 per cent eosinophils, 2 per cent monocytes and 2 per cent basophils. The urine contained 2 to 6 white blood cells per high power field, and there was no bile. The urine urobilinogen determination was 1:64. The erythrocyte sedimentation rate was 15 mm. per hour (Westergren). The stool was guaiac negative and contained ova of C. sinensis. The fasting blood sugar level was 84 mg. and the urea nitrogen was 23 mg. per hundred cubic centimeters. Liver function tests revealed the following: sulfobromophthalein sodium, no retention; cephalin flocculation, 1 plus. The serum cholesterol determination was 219 mg. per hundred cubic centimeters. Blood agglutination reactions for typhoid, Salmonella and Shigella paradysenteriae were negative. The sigmoidoscope was passed a distance of 25 cm., and the mucosa was found to be normal.

A course of chloroquine diphosphate (in a dosage of 500 mg. a day) was given for four weeks, and two stool examinations toward the end of the treatment were negative for ova of C. sinensis. However, a subsequent stool examination, one month after treatment, revealed their presence.

CASE 4.—A white girl 4 years of age was admitted to the pediatric wards of Mount Sinai Hospital with a main complaint of nodding of the head of six months' duration. She had been born in Shanghai and had lived there until coming to the United States three months previously. She had had dysentery at 2 years of age. Six months prior to her admission to the hospital, rotation and roving of the eyes had developed. Later, she exhibited a peculiar mannerism of repeatedly dropping her head and raising it every ten or fifteen minutes, mainly in the mornings. There was a history of retarded development. She had no symptoms referable to the gastrointestinal tract. A routine stool examination before entry revealed ova of C. sinensis.

Physical examination revealed a child without distress. There was an erythematous rash on the extensor surface of the arms and thighs. The liver and spleen were not palpable.

The hemoglobin concentration of the blood was 12.4 Gm. per hundred cubic centimeters, and the white blood cell count was 7,400 with 46 per cent polymorphonuclear neutrophils, 48 per cent lymphocytes, 3 per cent monocytes and 3 per cent eosinophils. The urine contained an occasional pus cell. The stool culture showed atypical Escherichia coli. The serum agglutination tests were negative for B. abortus and B. melitensis. On microscopic examination, the stool and biliary drainage revealed ova of C. sinensis. The blood urea nitrogen determination was 11 mg. and the serum cholesterol was 420 mg. per hundred cubic centimeters, with cholesterol esters 250 mg. per hundred cubic centimeters. The cephalin flocculation reaction was negative.

The head nodding was not present during the hospital stay. A ten day course of enteric-coated tablets of methylrosaniline chloride (10 mg. three times a day) was given. Immediately following the treatment, two stool examinations failed to reveal the presence of ova of C. sinensis.

## COMMENT

Each of the foregoing cases was considered as an example of mild infection with C. sinensis. Three of the patients had symptoms referable to the upper part of the abdomen that probably were the result of hepatic, biliary or duodenal dysfunction due to the presence of adult flukes and ova. One patient, a child (case 4), had no gastrointestinal symptoms. It is well known that the majority of infected persons harbor few worms and present few symptoms. However, in heavier infections, perhaps as in cases 1, 2 and 3, there may be an irregular appetite, pain in the upper part of the abdomen, attacks of diarrhea and constipation, and loss of weight. In case 1 a prolonged low grade fever was the chief symptom. Chronic cholecystitis is often suspected and is not uncommon.[12] In Howard's case[3] calculous cholecystitis was present.

In advanced stages of the disease icterus, ascites and hepatosplenomegaly, the classic observations in hepatic cirrhosis, may appear. Episodes of jaundice may occur on the basis of biliary obstruction from adult worms in the common duct or as a result of attacks of acute cholangitis or hepatitis. Night blindness has been reported and is probably due to an associated vitamin A deficiency, as seen in chronic hepatic disease. In Crawford's case[4] pulmonary infiltrations consistent with a diagnosis of Löffler's syndrome were observed. Eosinophilia, noted in 3 of our cases, is generally present and is variable in amount. The eosinophil count may exceed 50 per cent. Leukocytosis is commonly observed, especially in early cases.[4]

The diagnosis is verified by the finding of the characteristic ova of C. sinensis in the feces or in the fluid obtained by duodenal drainage.[1c] In the search for ova concentration of the stool should be attempted by sedimentation technics, since the ova are heavy and might be missed in material obtained by flotation.

The chemotherapy of clonorchiasis is not particularly satisfactory, because the parasite is difficult to eliminate with the available drugs. Methylrosaniline chloride is the drug of choice in the treatment of early cases.[1c] It is given to adults in doses of 60 to 120 mg. three times a day for periods of two to four weeks in the form of enteric-coated tablets. In case 1, with a careful follow-up period of three months, the use of this drug was followed by clinical improvement, a decrease in eosinophilia and temporary disappearance of Clonorchis ova from the stools. In cases resistant to several courses of methylrosaniline chloride, a course of intravenous injections of sodium antimonyl tartrate may be tried.[1c] The drug is given intravenously on alternate days in the form of a freshly prepared 2 per cent solution. The initial dosage of 60 mg. should be doubled on the third day (120 mg.), and then this dosage should be injected every other day until a total of 1.3 to 1.8 Gm. has been given. We have had no personal experience with this method of treatment.

In 1 instance, case 3, chloroquine diphosphate was used to determine whether or not it had any clonorchicidal value. This drug is heavily concentrated in the liver and, in addition to its antimalarial activity, is said to possess amebacidal activity in amebic hepatitis. It failed to eliminate Clonorchis ova from the stools, although it was given for a period of three weeks.

### SUMMARY

1. Four cases of infection with Clonorchis sinensis were observed in white emigrants from Shanghai, China, who were residing in New York City.

2. A brief résumé of the epidemiologic and clinical features of this disease is presented.

3. Chloroquine diphosphate was used in 1 patient but had no influence on the infection with C. sinensis.

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# SEPTICEMIA DUE TO BACTEROIDES

## Aureomycin Hydrochloride Therapy in Two Cases Due to Bacteroides Funduliformis

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and
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A review of the literature reveals that Bacteroides-caused infections in human beings are not infrequent. It is our impression that the incidence of infections and septicemia due to Bacteroides is probably much greater than that reported. These organisms are normal inhabitants of the mucous membranes of the body, and injury of mucosal surfaces, such as may occur in a ruptured appendix, may result in localized or widespread infections due to Bacteroides. If the blood stream is invaded, septicemia may result with metastatic abscesses, and the outlook becomes exceedingly grave.

Eighteen cases of Bacteroides-caused infection have been observed at John Gaston Hospital in the past five years. This report is concerned only with 2 cases of septicemia due to Bacteroides funduliformis treated with aureomycin hydrochloride.

Castellani and Chambers[1] in 1919 proposed the designation *Bacteroides* for a large group of anaerobic, nonsporulating bacilli. The 1939 edition of "Bergey's [illegible] Bacteriology"[2] classified the gram-negative members of the anaerobic, non-spore-forming bacilli under the genus Bacteroides.

The prognosis of septicemia due to Bacteroides is extremely poor. In 1941 Brown, Williams and Herrell[3] reported the recovery of 1 of 15 patients with septicemia due to B. funduliformis at the Mayo Clinic. In an additional 10 cases of septicemia due to Bacteroides collected from the literature by Thompson and Beaver[4] only 4 patients recovered. In 1947 Ruys[5] related the histories of 4 patients with septicemia due to Bacteroides; only 1 survived after a prolonged febrile illness. Six cases of septicemia due to Bacteroides have been observed at John Gaston Hospital in the past five years. In the first 4 the patients died in spite of chemotherapy, antibiotics and supportive treatment. The last 2 recovered under treatment with aureomycin hydrochloride.

### REPORT OF CASES

CASE 1.—*History.*—A Negro woman aged 69 was hospitalized Dec. 21, 1948 with a history of purulent nasal discharge, cough, headache, sore throat, chills, fever, nausea and vomiting of three weeks' duration. The nasal discharge had been excessive, thick and greyish yellow, and it was intermittently streaked with blood. Chills and fever occurred daily. There was no history of abdominal pain, but malaise and lethargy were noted.

*Physical Examination.*—The temperature was 103.4 F., the pulse rate 105 per minute, the respiratory rate 18 per minute and the blood presure 180 mm. of mercury systolic and 120 mm. diastolic. The heart was enlarged. The abdomen was distended

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[illegible]ide was provided for this study by Lederle [illegible] the American Cyanamid Company.
[illegible] Department o[illegible] of Ten- [illegible] performed [illegible]

From the Divisions of Medicine and [illegible] University of Tennessee College of Medicine, and the John Gaston Hospital.

1. Castellani, A., and Chambers, A. J.: Manual of Tropical Medicine, ed. 3, New York, William Wood & Company, 1919.

2. Bergey, H. D.: Bergey's Manual of Determinative Bacteriology: A Key for the Identification of Organisms of the Class Schizomycetes, Baltimore, Williams & Wilkins Company, 1934, pp. 404-413; 1939, pp. 556-570.

3. Brown, A. E.; Williams, H. L., and Herrell, W. E.: Bacteroides Septicemia, J. A. M. A. **116**: 402-404 (Feb. 1) 1941.

4. Thompson, L., and Beaver, D. C.: Bacteremia Due to Gram-Negative Organisms of the Genus Bacteroides, M. Clin. North America **15**: 1611-1626, 1932.

5. Ruys, A. C.: Bacteroides Funduliformis, J. Path. & Bact., **59**: 313-316, 1947.

and tympanitic but not tender. There was no abdominal mass. The day after admission severe pain developed in the right upper quadrant with tenderness in that area. Moderate icterus of the scleras was observed. Five days after admission the icterus was pronounced, the abdomen distended, peristalsis absent and rebound tenderness decided. The patient continued to have a septic temperature. The liver was palpable 2 fingerbreaths below the costal margin on the right side and was tender. Slight nuchal rigidity was noted.

*Treatment and Course.*—Two blood cultures for B. funduliformis were positive. The patient had shown no response to treatment with penicillin, sulfadiazine or streptomycin. It was decided to investigate the therapeutic effect of aureomycin. Sensitivity tests revealed that the growth of B. funduliformis from the patient's blood was not inhibited by penicillin in a concentration of 2 units per cubic centimeter, by streptomycin in a concentration of 250 micrograms per cubic centimeter or by sodium sulfadiazine in a concentration of 125 mg. per hundred cubic centimeters, but growth was entirely inhibited by aureomycin hydrochloride in a concentration of 13 micrograms per hundred cubic centimeters.

Oral administration of aureomycin was impossible in this case because of the existing ileus. Aureomycin therapy was begun eleven days after admission. The agent was given intramuscularly in distilled water to which procaine hydrochloride had been added. In view of the Herxheimer-like reactions described by Spink and associates [6] in the treatment of brucellosis, it was decided to give small initial doses. The following dosage was given: 750 mg. in divided doses during the first twenty-four hours, 2 Gm. during the second twenty-four hours, 4 Gm. during the third twenty-four hours and 5 Gm. a day thereafter. With the institution of aureomycin therapy, all other antibiotics and chemotherapy were discontinued. No reaction occurred to this medication.

Fifteen days after admission the abdomen was soft, peristalsis was audible, the liver was barely palpable and abdominal tenderness had essentially disappeared. Seventeen days after admission (forty-eight hours after use of the Wangensteen suction tube was discontinued) oral administration of aureomycin was begun. However, the intramuscular route was resumed when it was observed that the blood level of aureomycin had fallen 60 per cent.

On the twenty-fourth day after admission of the patient there developed acute myocardial decompensation with decided dyspnea, tachycardia, pulmonary edema, hepatomegaly and edema of the lower extremities. Excellent response was obtained with digitalization, ammonium chloride, mercurial diuretics and the Karell diet. By the twenty-eighth day all evidence of decompensation had disappeared. On the twenty-sixth day the dosage of aureomycin hydrochloride was reduced to 500 mg. orally every six hours.

The septic type of temperature disappeared on the fourth day of aureomycin therapy, and the temperature gradually returned to normal. From the twenty-sixth day after admission the patient had no complaints aside from severe weakness and lethargy. She had a completely negative attitude. It was considered that this was the result of a severe infection superimposed on already existent cerebral arteriosclerosis. The spinal fluid was clear and contained no cells. Neurologic examination revealed normal conditions. Therefore the Levine tube was repassed on the thirty-first day and formula feeding was resumed. Supportive treatment consisted of repeated small blood transfusions, vitamins, liver extract, ferrous sulfate and intravenous amigen.®

In view of ten negative blood cultures, together with clinical and physical evidence of improvement, aureomycin therapy was discontinued after the patient had received 75.45 Gm. of the drug. Following this, the temperature rose to show a daily spike of about 101 F. for the ensuing six days. It then became normal and remained so. Because of the extremely low plasma potassium level (3 milliequivalents per liter), 3 Gm. of potassium chloride were given daily beginning on the forty-second day.

On the forty-sixth day there was striking mental improvement. From this date the patient was afebrile, talkative, well oriented and desirous of going home. The patient was discharged on the fifty-ninth day after admission.

*Laboratory Data.*—The white blood cell count varied from 35,100 to 11,250 and the red from 3,150,000 to 4,850,000 per cubic millimeter; the hemoglobin level from 8.5 to 12.5 Gm. per hundred cubic centimeters; the hematocrit reading from 21 to 41 per cent; the one minute serum bilirubin determination from 12.2 to 0.8 mg. and the total serum bilirubin from 19.4 to 1.0 mg. per hundred cubic centimeters; the twenty-four hour urine urobilinogen level from 64.6 to 6.6 Ehrlich units; sulfobromophthalein sodium retention from 32 to 7 per cent; total plasma protein from 5.8 to 6.6 Gm. with albumin from 2.9 to 3.6 Gm. and globulin from 2.8 to 3.0 Gm. per hundred cubic centimeters; the sedimentation rate (Wintrobe) from 70 to 18 mm. in an hour; nonprotein nitrogen from 93 to 28 mg. per hundred cubic centimeters. Repeated spinal fluid examinations were normal; urinalyses revealed 1 plus albumin. The highest blood aureomycin level obtained was 8 micrograms per hundred cubic centimeters.

CASE 2.—*History.*—A Negro woman aged 35 was hospitalized Jan. 25, 1949 with a history of illness for three weeks. The onset was marked by upper abdominal pain, nausea and vomiting. The pain lasted four to five days, but the vomiting persisted. Shortly after the onset of this illness, intermittent chills with a high elevation of temperature were noted. For two weeks prior to admission a nonproductive cough had been present. For one week prior to admission the patient had been given 300,000 units of penicillin daily by her physician.

*Physical Examination.*—Examination on admission revealed a temperature of 99.6 F., a pulse rate of 110 per minute, a respiratory rate of 28 per minute and blood pressure of 120 mm. of mercury systolic and 86 mm. diastolic. There was a mild hyperemia of the nose and throat. There was moderate rigidity in the right upper quadrant of the abdomen and in the epigastric area. Tenderness was noted in these areas and in the right lower quadrant. The liver, kidney and spleen could not be palpated. There was no abdominal mass. Pelvic examination revealed essentially normal conditions.

*Treatment and Course.*—Shortly after admission the patient became icteric; the liver became palpable and tender. In spite of massive doses of penicillin and streptomycin, together with repeated blood transfusions, the patient had a septic type of temperature with a daily spike to 105 or 106 F. Two positive blood cultures for Streptococcus fecalis and for B. funduliformis were obtained. At the height of fever, a third blood culture was positive for B. funduliformis only. On the fifteenth day after admission, penicillin and streptomycin therapy were discontinued; aureomycin therapy was instituted following sensitivity tests, which showed that the growth of B. funduliformis was not inhibited by penicillin 2 units per cubic centimeter or by streptomycin 250 micrograms per cubic centimeter or by sulfadiazine 125 mg. per hundred cubic centimeters but was inhibited by aureomycin hydrochloride 12 micrograms per cubic centimeter. It had previously been shown that growth of Str. fecalis was inhibited by penicillin 0.12 units per cubic centimeter or by streptomycin 1.06 micrograms per cubic centimeter.

The patient was given 750 mg. of aureomycin hydrochloride by mouth in divided doses during the first twenty-four hours, 2 Gm. during the second twenty-four hours, 4 Gm. during the third twenty-four hours and 5 Gm. a day thereafter. She was also given a high protein and high carbohydrate diet with supplementary vitamins. The patient responded dramatically. She became afebrile on the fifth day of aureomycin therapy and remained so. Studies of the blood chemistry prior to the institution of aureomycin therapy revealed a pronounced reduction of plasma potassium (3.3 milliequivalents per liter); therefore 3 Gm. of potassium chloride were given daily for four days. Although nausea persisted in association with the administration of aureomycin, the persistent vomiting disappeared. Dehydration, sweating, lethargy, weakness and anorexia rapidly subsided. On the eighth day of aureomycin therapy the dosage was reduced to 4 Gm. The following day the twenty-four hour dosage was further reduced to 2 Gm. On the fourteenth day administration of this antibiotic was discontinued, as the patient was asymptomatic, showed no physical evidence of disease, had been afebrile for nine days, and had shown five negative blood cultures. The patient was discharged on the thirty-sixth day after admission.

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[6] Spink, W. W.; Braude, A. I.; Castaneda, M., and Goytia, R.: Aureomycin Therapy in Human Brucellosis Due to Brucella Melitensis, J. A. M. A. **138**:1145 (Dec. 18) 1948.

*Laboratory Data.*—The white blood cell count varied from 26,900 to 6,550 and the red from 2,160,000 to 3,870,000 per cubic millimeter; the hemoglobin level from 7.5 to 12 Gm. per hundred cubic centimeters; the hematocrit reading from 22 to 34 per cent; the twenty-four hour urine urobilinogen level from 47.6 to 2.5 Ehrlich units; the one minute serum bilirubin determination from 0.3 to 1.5 mg. and the total serum bilirubin from 2.8 to 0.9 mg. per hundred cubic centimeters; sulfobromophthalein sodium retention from 30 to 8 per cent; the total plasma protein from 6.7 to 8.2 Gm. with albumin from 2.7 to 3.2 Gm. and the globulin from 5.0 to 3.2 Gm., per hundred cubic centimeters; the cephalin flocculation reading from 4 plus to 1 plus at twenty-four hours and from 4 plus to 1 plus at forty-eight hours; the sedimentation rate (Wintrobe) from 76 to 23 mm. in one hour. Repeated urinalyses were normal. The nonprotein nitrogen level remained about 30 mg. per hundred cubic centimeters. A spinal fluid examination was normal. The highest aureomycin blood level was 8 micrograms per hundred cubic centimeters.

### COMMENT

Bacteroides infections are more frequent than is generally recognized. Eighteen cases have been observed at the John Gaston Hospital in the past five years. Six of these were cases of septicemia due to Bacteroides. It would appear that many cases are not diagnosed because of the scarcity of information concerning these organisms and because of the failure to look for anaerobic bacteria. Septicemia due to Bacteroides, especially the funduliformis type, is exceedingly severe, with the majority terminating fatally. Until the present there has been no specific or adequate therapy for this condition. The excellent response to aureomycin hydrochloride therapy in 2 recent cases of septicemia due to B. funduliformis is therefore most encouraging.

In both cases supportive therapy included repeated small blood transfusions, multivitamins, ferrous sulfate, liver extract and a special diet high in protein and carbohydrate. The blood chemical studies in both instances revealed a pronounced reduction in the plasma potassium level, which was corrected by the oral administration of potassium chloride.

In vitro sensitivity tests demonstrated that growth of the B. funduliformis isolated from the patient's bloodstream would not be affected greatly by sulfadiazine, penicillin or streptomycin therapy. However, growth was inhibited by aureomycin hydrochloride. In vitro studies failed to show the development of resistant organisms after prolonged treatment with aureomycin. Other than moderate nausea, significant toxic reactions to the drug were not observed.

### SUMMARY

Two cases of septicemia due to Bacteroides funduliformis have been successfully treated with aureomycin hydrochloride. The following dosage was used: 750 mg. in the first twenty-four hours, 2 Gm. in the second twenty-four hours, 4 Gm. in the third twenty-four hours and 5 Gm. a day thereafter until definite evidence of recovery was noted.

Significant toxic reactions were not observed in the use of aureomycin hydrochloride.

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# MATERNAL DEATHS FROM COCCIDIOIDOMYCOSIS

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and
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Disseminated coccidioidomycosis as a cause of maternal deaths has not been reported previously. We are reporting 4 fatal cases, while a fifth case is still being observed. Unquestionably, other fatal and unrecognized cases have occurred in this endemic area, or the subjects have migrated to other areas, with a final diagnosis of maternal death due to meningitis of unspecified cause.

In Kern General Hospital for the year 1948, there were 4 maternal deaths in 2,410 deliveries; of these deaths, 3 were due to disseminated coccidioidomycosis. It is interesting to note that during the same year no mothers died of tuberculosis, either in this hospital or in Kern County. We feel that other cases will be discovered and reported and that the pathogenesis of disseminated coccidioidomycosis as a fatal complication of pregnancy and as a cause of maternal death will become well known.

### REVIEW OF LITERATURE

An exhaustive search of the literature of coccidioidal granuloma has failed to lead to the discovery of a single publication concerning disseminated coccidioidomycosis occurring during pregnancy. Forbus and Bestebreurtje[1] published a comprehensive review of the literature with an excellent exposition of the pathogenesis of coccidioidomycosis. In 1936, Abbott and Cutler[2] published a review of the pathologic studies of chronic coccidioidal meningitis and presented a bibliography of all reported cases of coccidioidal meningitis. They divided meningitis into two general forms: (1) meningitis associated with granulomas in other organs, and (2) primary chronic coccidioidal meningitis. Three of our 4 cases of coccidioidal meningitis fall into the first category and 1 in the second.

### REPORT OF CASES

CASE 1.—E. N., a 37 year old Negro gravida II, para I, was admitted to the hospital on April 17, 1944, complaining of pain in the abdomen and in the right hip. An abscess on her right hip was finally diagnosed, and incision and drainage was done on April 26. Labor began on May 9, and she delivered a stillborn infant (sex unnoted) spontaneously. The heart tones disappeared during labor. Her postpartum condition became critical, and she died three days following delivery.

*Laboratory Data.*—Results of Mantoux, coccidioidin and brucellergin skin tests were negative. Biopsy material from the abscess showed Coccidioides imitis. Examination of the spinal fluid revealed 810 cells per cubic millimeter, 95 per cent of which were polymorphonuclear leukocytes. No serologic tests were performed. A roentgenogram showed an osteolytic area

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The complement fixation and precipitin tests were done in the laboratory of Dr. C. E. Smith, School of Medicine, Stanford University.

Dr. Ralph C. Benson, University of California Hospital, and Dr. B. O. Raulston, Dean, School of Medicine, University of Southern California, assisted in the preparation of this paper.

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J. W. Birsner, M.D., was formerly Chief Resident of Radiology, Kern General Hospital, and is now attending in Radiology at Kern General Hospital.

[1] Forbus, W. D., and Bestebreurtje, A. M.: Coccidioidomycosis: A Study of Ninety-Five Cases of the Disseminated Type with Special Reference to the Pathogenesis of the Disease, Mil. Surgeon **99**: 653-719 (Nov.) 1946.

[2] Abbott, K. H., and Cutler, O. I.: Chronic Coccidioidal Meningitis, Review of Literature and Report of Seven Cases, Arch. Path. **21**: 320-330 (March) 1936.

in the crest of the right ileum. The autopsy disclosed microscopic and macroscopic evidence of disseminated coccidioidomycosis in the skin, lungs, mediastinal nodes, meninges, spleen, pancreas, kidneys, thyroid and bones. Neither the fetus nor the placenta were mentioned in the clinical chart or in the autopsy report.

CASE 2.—M. E. B., a 31 year old white gravida III, para III, was admitted to the hospital on Jan. 29, 1948, forty-eight hours post partum. Her past history indicated that she had had "erythema nodosum due to Coccidioides" in January 1946.

She had been admitted to another hospital with a history of influenza for one week prior to delivery and with complaints of severe headache and soreness of the neck for twenty-four hours. At the time of delivery, her temperature was 102 F. and she complained of a stiff neck. Her spontaneous delivery was uneventful. Examination of spinal fluid shortly before her transfer showed 573 white blood cells per cubic millimeter, with 60 per cent polymorphonuclear cells, 34 per cent lymphocytes and 6 per cent eosinophils. At the time of admission, examination showed a somewhat confused woman whose neck was stiff and whose uterus extended 12 cm. above the symphysis.

The patient's course in the hospital was marked by episodes of unconsciousness, from which she would more or less completely recover. She became irrational and disoriented after about a month of hospitalization. During this time, she received both penicillin and streptomycin in large doses. Two cutaneous facial ulcerative lesions appeared from which biopsy specimens were taken. They showed cutaneous coccidioidomycosis.

A noteworthy description by the neurologic consultant, Dr. J. M. Nielsen, on March 2, 1948, is quoted in part: "Her pupils were large, the left being larger than the right. The left pupil reacted poorly to light. Both disks were choked. There was decided rigidity of the neck and pronounced hypersensitivity throughout the body. There was complete loss of sphincter control. Both legs were paralyzed and one drawn up in flexion. There was some loss in strength of both upper limbs. Quick response to pinprick existed throughout the body, including the fourth and fifth sacral segments, which indicated that the lateral spinothalamic tracts were intact. However, the paralysis and the loss of sphincter control indicated that the central portion of the spinal cord was out of function. This constituted a meningeal picture." The patient died on April 18.

*Laboratory Data.*—On January 29, a spinal tap showed 573 white blood cells per cubic millimeter, with 60 per cent polymorphonuclear cells, 34 per cent lymphocytes and 6 per cent eosinophils. Examination of the spinal fluid on February 4 showed 88 white blood cells, with 53 per cent polymorphonuclear cells and 47 per cent lymphocytes. On February 26, a roentgenogram of the lungs and the skull showed no abnormalities. The spinal fluid contained 290 white blood cells, with 70 per cent polymorphonuclear cells and 30 per cent lymphocytes. On February 27 a biopsy of the lesion of the right nasolabial fold revealed disseminated coccidioidomycosis. On February 28, the results of the serum complement fixation tests for Coccidioides were strongly positive through dilution 1:4. No precipitins were noted. From the observations it was concluded that an old coccidioidal infection existed, with the notation that coccidioidal meningitis has been known to occur with low titer serologic reactions.

On March 13 the results of complement fixation tests of the blood serum were positive through dilution 1:4. It was noted that, while the titer of complement fixation was not high, in conjunction with the increased spinal fluid cell count it would seem to establish the diagnosis of coccidioidal meningitis.

On March 24 the complement fixation titers of the blood serum were weakly positive through dilutions 1:4. It was concluded that the continued high cell count was diagnostic, with the comment that some patients with meningitis have low complement-fixing titers. On April 14 the spinal fluid cell count was 25 white blood cells, with 60 per cent polymorphonuclear cells and 40 per cent lymphocytes. Results of all serologic tests of the spinal fluid were negative. Permission for autopsy was refused.

*Infant.*—The infant was a well developed term baby who gained well from birth.

CAES 3.—B. G. S., a 28 year old Negro gravida II, para I, whose expected date of confinement was Sept. 27, 1948, was admitted to the hospital on July 23, complaining of a headache of twelve hours' duration. Examination revealed only a temperature of 101 F. and a stiff neck. All reflexes were normal. Examination of the spinal fluid showed 1,060 white blood cells per cubic millimeter, with 94 per cent polymorphonuclear cells. Her white blood cell count was 9,000, with a normal Schilling count. A roentgenogram of the chest taken on August 2 showed "confluent bronchopneumonia, cause unspecified." On August 4, after her membranes ruptured spontaneously, she delivered a normal premature male infant weighing 4 pounds 8 ounces (2,041 Gm.). The patient died the following day. Pathologic examination of the placenta revealed no abnormalities.

In summary, postmortem examination proved the existence of a disseminated form of coccidioidomycosis involving the lungs, mediastinal nodes, meninges, spleen, adrenals and kidneys. Results of coccidioidin precipitin tests and complement fixation tests were strongly positive and were interpreted as indicative of a "progressive disseminated coccidioidal infection."

*The Infant.*—The infant was an apparently normal premature male who gained until his twenty-fifth day of life, at which time he vomited a feeding and aspirated some of the formula. He died within a few hours. An autopsy showed atelectasis, prematurity and bronchopneumonia. Postmortem complement fixation tests for coccidioidomycosis showed weak titers, which were interpreted as evidence of passive transfer of antibodies. No microscopic or macroscopic evidence of any form of coccidioidomycosis was found.

CASE 4.—E. M., a 34 year old white gravida V, para I, with three abortions, was admitted to the hospital on Aug. 24, 1948, and had complained of a stiff neck and frontal headache for one day. On April 16, she was noted to have had a positive tuberculin (3 plus) and a negative coccidioidin skin reaction. A chest film showed "increased bronchial markings consistent with pulmonary coccidioidomycosis." The patient's last menstrual period was in February 1948. The results of the physical examination were essentially normal except for a positive Babinski sign on the right and a stiff neck. While in the hospital, she continued to complain of a severe headache, which was occasionally accompanied with vomiting. On October 2, her pregnancy terminated in a spontaneous delivery of an apparently normal mature male infant. The patient's condition did not improve, and she was discharged to private care on November 4.

*Laboratory Data.*—On August 24, a lumbar puncture revealed 124 cells, with 21 polymorphonuclear cells and 72 lymphocytes. On August 28 the result of the coccidioidin skin test was strongly positive; the result of the complement fixation test was negative but of the precipitin test positive through dilutions of 1:10. The conclusion drawn from this test was that there was a "currently active coccidioidal infection acquired in the not too distant past."

The roentgenogram of the chest on August 30 was normal. On September 13 a spinal puncture showed a cell count of 140, with 2 per cent polymorphonuclear cells and 98 per cent lymphocytes. On September 22, the result of the complement fixation test in dilution of 1:2 was positive. The reaction to the precipitin test was strongly positive undiluted.

On October 2, the spinal puncture showed 157 cells, with 8 per cent polymorphonuclear cells and 92 per cent lymphocytes. The complement fixation reaction of the blood serum was strongly positive in dilution of 1:2 and positive in dilution of 1:4. The reaction to the precipitin was positive through a dilution of 1:10. On November 3, the result of the complement fixation test was positive in dilutions through 1:16 and the precipitins were positive through dilutions of 1:40. On November 4, the lumbar puncture showed 129 cells, with 8 per cent polymorphonuclear cells and 92 per cent lymphocytes.

*Infant.*—The child was an apparently normal healthy male who gained well during his hospital stay. A complement fixation test made at birth from the cord blood showed a positive reaction through a dilution of 1 : 4.

On November 5 the reaction was doubtful in dilution of 1 : 2. This was interpreted as being suggestive of passive transfer of antibodies through the placenta. Pathologic examination of the placenta showed no evidence of coccidioidal granuloma.

CASE 5.—B. T. B., a 27 year old Negro gravida IV, para II, with one abortion, was first seen in the Prenatal Clinic on December 10, during her thirty-ninth week of gestation. On December 25, she returned to the Emergency Clinic complaining of weakness in the left arm and pain in the left side of the chest for two weeks.

*Physical Examination.*—The blood pressure was 95 systolic and 60 diastolic. The patient's neck was stiff to motion in any direction. Her lungs produced only a few rales in both bases. The uterine fundus was about 4 cm. below the costal margin, and the fetal heart tones were present. She was admitted to the hospital with a diagnosis of "possible poliomyelitis." Her course in the hospital was marked by slowly developing respiratory distress and coma. Between December 26 and December 27, the fetal heart tones disappeared, and the patient died undelivered on December 27.

*Laboratory Data.*—A roentgenogram of the chest, May 27, 1947, was normal. The Kahn reaction of the blood was positive. On Dec. 10, 1948 the hemoglobin was 10.5 Gm.; the blood type was revealed as Rh positive, and the Kahn reaction was positive. From a roentgenogram of the chest, reported as "suspicious," pathologic changes in the lungs were suspected.

On December 24, a roentgenogram of the chest showed "possible miliary tuberculosis."

*Autopsy.*—Postmortem examination of the patient revealed previously unsuspected disseminated coccidioidomycosis of the lungs, spleen, kidneys and adrenals. The meninges were not diseased. Examination of the tubes, ovaries, uterus and placenta showed no abnormalities. The fetus showed no evidence of coccidioidomycosis.

COMMENT

One of us (J. W. B.) started this study when he discovered that in case 1 inadequate analysis had been made at the postmortem examination. We were struck with the possibility that placental coccidioidal granuloma might occur with subsequent infection of the fetus. We are familiar with the similarity between coccidioidal granuloma and tuberculosis, and we are familiar with the work of Loewenstein[3] in congenital tuberculosis. Loewenstein, through injection of maternal and fetal (cord) blood into guinea pigs, conclusively demonstrated bacteremia of Mycobacterium tuberculosis in both mother and child. Tuberculosis of the placenta accounted for the bacteremia.

Coccidioidomycosis differs from tuberculosis in that the kidneys, the fallopian tubes and the prostate are the only portions of the genitourinary tract observed to have been involved. There was an absence of the disease in the genital tract in cases 1, 2, 3 and 5. All the other organ systems except the gastrointestinal tract were extensively diseased. It appears that this feature, in the light of the foregoing statement, carries considerable significance. If the uterus and endometrium have never been involved in coccidioidomycosis, then congenital coccidioidomycosis, unlike congenital tuberculosis, probably has never been observed.

In cases 2, 3 and 4, strong evidence exists in the weak and progressively diminishing fetal coccidioidin complement-fixing titers, in the normal placentas and in the normal growth and development of the infants, that a granuloma did not develop in the placenta. Consequently, congenital coccidioidomycosis did not become manifest. There was no postmortem evidence of congenital transmission in case 5.

Case 3 is included in this paper because, in our experience, primary coccidioidal meningitis has been a uniformly fatal disease despite all treatment, and it is expected that the patient in this case, too, will die. A review of the literature substantiates this impression.

It is recommended that, in a known endemic area for coccidiodomycosis, all pregnant patients with symptoms of the upper part of the respiratory tract have skin tests and be carefully followed for possible dissemination. It is also recommended that all pregnant patients with signs and symptoms of meningeal involvement or meningitis be carefully studied for infection with Coccidioides.

SUMMARY AND CONCLUSIONS

Disseminated coccidioidomycosis in pregnancy, fatal in 4 cases reported herein, in 3 with coccidioidal meningitis and 1 without meningeal involvement, is reported as a new cause of maternal deaths.

No evidence exists that coccidioidomycosis imitates tuberculosis with respect to congenital transmission.

ADDENDUM

Dr. L. H. Winer, Beverly Hills, Calif., permitted us to examine histologically a human placenta that contained typical granulomas of coccidioidomycosis. We have been unable to learn any further details of the subject or her infant.

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[3] Loewenstein, E.: Congenital Tuberculosis: Its Clinical Importance, Am. Rev. Tuberc. **51**: 225-230 (March) 1945.

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# Clinical Notes, Suggestions and New Instruments

## RADIOACTIVE IODINE ($I^{131}$) IN THE DIAGNOSIS OF LINGUAL THYROID

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The specific affinity of functioning thyroid tissue for iodine is the rationale for the use of radioactive iodine in tracer doses to study iodine metabolism and the physiology of the human thyroid gland. The pioneer work of Hamilton[1] and Hertz[2] initiated this type of investigation.

Radioactive iodine was given to a girl 11 years of age in tracer amounts to aid in the preoperative evaluation of a suspected lingual thyroid, subsequently proved to be such microscopically and by radioautograph. This case is reported as another example of the value of radioactive tracer technics in the surgical management of thyroid abnormalities. Feitelberg and associates[3] have reported the use of radioactive iodine in the study of a lingual thyroid, but their subject did not have operative intervention.

Persistence of thyroid tissue at the site of its origin, the foramen cecum at the base of the tongue, is an uncommon

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From the Department of Surgery and the Surgical Research Laboratory of the Medical College of Virginia.

This study was aided by grants from the Office of Naval Research and the Research and Development Board, Office of the Surgeon General, Department of the Army.

[1] Hamilton, J. G.: Rates of Absorption of Radioactive Isotopes of Sodium, Potassium, Chlorine, Bromine and Iodine in Normal Human Subjects, Am. J. Physiol. **124**: 667, 1938.

[2] Hertz, S.; Roberts, A., and Evans, R. D.: Radioactive Iodine as Indicator in Study of Thyroid Physiology, Proc. Soc. Exper. Biol. & Med. **38**: 510, 1938.

[3] Feitelberg, S.; Kaunitz, P. E.; Wasserman, L. R., and Hohalem, S. B.: The Use of Radioactive Iodine in the Diagnosis of Thyroid Disease, Am. J. M. Sc. **216**: 129, 1948.

anomaly which is amenable to surgical treatment. Montgomery[4] in a review of the literature in 1936 found 231 reports on lingual thyroid but considered only 144 as authentic. He credited the first authenticated case to Bernays (1888). Buckman[5] reported 242 such cases in a similar review of the literature in 1936. The recent review of Goetsch[6] reported 3 cases of lingual thyroid substantiated by histologic section. The reviews of Montgomery and Buckman include excellent discussions of the historic aspect of lingual thyroid, the development of the tongue and the thyroid gland, and the embryologic malformation which results in the development of the lingual thyroid.

The present report purposely excludes these aspects of lingual thyroid and directs attention to the use of radioactive iodine and the radioactive tracer technic as an aid in the preoperative evaluation of this thyroid anomaly.

## REPORT OF CASE

P. P., a white girl, 10 years of age, was admitted to the Medical College of Virginia, Hospital Division, on Aug. 2, 1948 complaining of a lump in the tongue. When the patient was 4 years of age, a small "cyst" was noted at the base of the tongue during tonsillectomy. The parents were advised to keep the mass under surveillance and to return for consultation if the mass increased in size or began to give symptoms of obstruction. The patient remained asymptomatic for a period of approximately six years, but about six months prior to admission the child's mother noticed that she talked "as if she had something in her mouth." The patient had slight difficulty in swallowing, but there was no serious dysphagia.

On physical examination, the patient was well developed for her age and was alert. The observation of greatest significance was an oval red mass measuring approximately 3 by 2 by 2 cm. at the base of the tongue at the site of the foramen cecum. When the tongue was protruded, the mass was easily visualized, being large enough to partially occlude the pharynx. The thyroid gland was not palpable in the normal position, and each cervical tracheal ring could be easily felt; so it was assumed that the entire thyroid had remained at the base of the tongue. The remainder of the physical examination revealed essentially normal conditions.

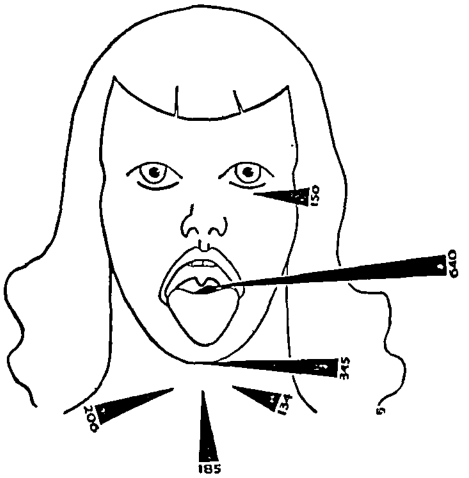

Fig. 1.—Diagrammatic illustration of lingual thyroid and concentration of radioactive material (expressed as counts per minute).

The results of the blood count, urinalysis and cholesterol determinations were all within normal limits. Two basal metabolic studies gave values of plus 24 and minus 10 per cent. Both were considered unsatisfactory due to the patient's difficulty in breathing while the test was being performed. A roentgenogram of the chest disclosed no abnormalities.

A tentative diagnosis of lingual thyroid was made, and surgical removal was advised. Although no thyroid gland was palpable in the normal position, this could not be considered conclusive evidence that none existed at that site; and it was important to determine whether the lingual mass contained all of the functioning thyroid tissue. This problem could have been solved by surgical exploration of the thyroid area, but this proved unnecessary following the use of radioactive iodine ($I^{131}$) in the following manner.

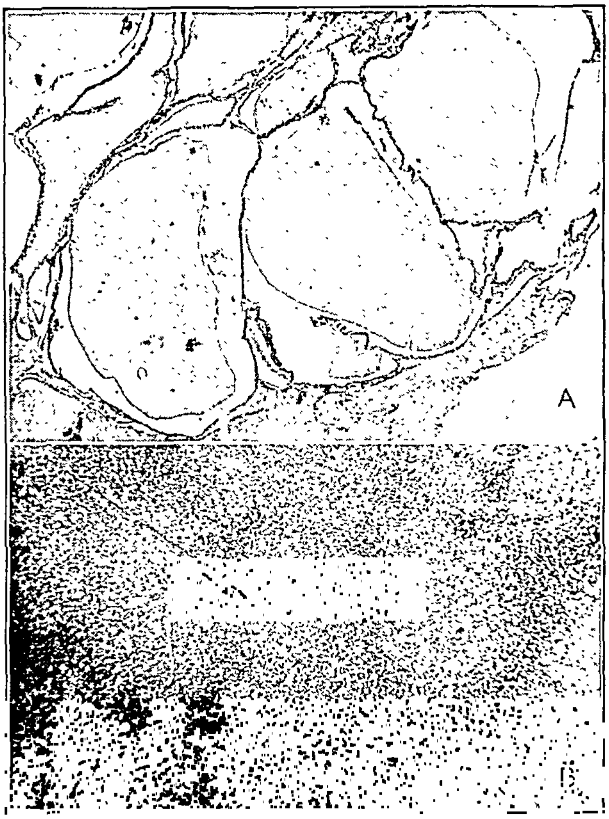

Fig. 2.—Photomicrograph (*A*) of hematoxylin and eosin-stained section and radioautograph (*B*) of tissue removed, magnification approximately × 20).

A tracer dose of 10 microcuries of radioactive iodine obtained from the Oak Ridge National Laboratory as $I^{131}$ in sodium bisulfite solution, $p_H$ 9.0, was given orally. A Geiger-Mueller tube 2.22 cm. (⅞ inch) long by 0.95 cm. (⅜ inch) in diameter, enclosed in a specially designed lead container to columnate the gamma rays given off by the radioactive iodine, was used to determine the localization of this material in the mass at the base of the tongue and in the zone in which the thyroid is normally located. The activity in the regions studied (expressed as counts per minute) was determined seven hours after oral administration of the tracer dose and is shown diagrammatically in figure 1.

On the basis of these results, it was concluded that the mass at the base of the tongue was functioning thyroid tissue and that the patient had little, if any, functioning thyroid tissue in the normal location.

The following morning a subtotal resection of the mass was performed by one of us (I. A. B.) using a suprahyoid approach.

The surgical specimen was fixed and embedded, and sections approximately 5 microns thick were mounted and covered with a thin film of celloidin. The sections were then taped to Kodak® pantomic X plates and left in place for five days. The resulting radioautograph when compared with the photomicrograph of a stained section from the same area (fig. 2), revealed that most of the radioactive iodine was localized in the acinar walls but that little was incorporated in the colloid.

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[4] Montgomery, M. L.: Lingual Thyroid, West J. Surg. **43**: 661, 1935. Lingual Thyroid: Comprehensive Review, ibid. **44**: 54; 122; 189; 237; 303; 373; 442, 1936.

[5] Buckman, L. T.: Lingual Thyroid, Laryngoscope **46**: 765, 888 and 936, 1936.

[6] Goetsch, E.: Lingual Goiter, Ann. Surg. **127**: 291, 1948.

The patient's postoperative course was uneventful, and she was discharged on the seventh postoperative day.

### SUMMARY

1. A case of lingual thyroid was proved by radioautograph and later by microscopic examination.
2. Radioactive iodine ($I^{131}$) was used as an aid in the preoperative localization of thyroid tissue.
3. The patient had a well developed lingual thyroid and no clinically demonstrable thyroid tissue in the normal position.

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## TOXIC EFFECTS OF PERCUTANEOUSLY ABSORBED ESTROGENS

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and
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The fact that steroid hormones, particularly estrogens, can pass through the skin is well known, but the potential dangers of this route of absorption have not been noted previously. For this reason, we believe that the case reported here is of considerable theoretical as well as practical interest.

### REPORT OF A CASE

The patient, a 44 year old Scotsman, presented himself with the complaint of impotence of four months' duration. He had been married for twenty-three years and had fathered four children. His sexual activity had always been regular and satisfactory. Eighteen months before seeking medical advice he had started working as a chemist for a small pharmaceutic concern; his assignment was to extract and purify estrogenic substances from pregnancy urine. During this process his hands came in frequent contact with alcoholic solutions of high estrogenic potency, and he also admitted that occasionally he scraped freshly crystallized estrogenic materials from the filter paper with his fingers. About six months after this work was started, the patient noted tenderness and increased size of the breasts. Weight loss (about 10 pounds, or 5 Kg.), headaches and decreased libido developed in three months more, and there was also some decrease in the size of the penis. No change in the amount of facial or body hair was noted.

Physical examination disclosed definitely increased breast tissue of a lobular consistency; the areolas were unusually dark in comparison with the general complexion, and the nipples were also slightly pigmented, tender and decidedly erectile. The testes were smaller than normal and rather soft; the penis was also small. There were no other physical observations of note.

Laboratory studies disclosed nothing of significance except for the urinary estrogen secretion. This was determined by extraction according to the Bachman-Petit procedure[1] and fluorimetric measurement by the technic of Bates and Cohen.[2] A twenty-four hour specimen of urine was found to contain 185 plus or minus 20 gammas per twenty-four hours (normal 15 to 24 gammas per twenty-four hours).

The patient was advised to remove himself from all contact with estrogenic substances and, in addition, was given 75 mg. of testosterone propionate plus 60 mg. of pregnenolone acetate[3] per week intramuscularly for the next six weeks. One month after the patient had discontinued his work in the chemical plant, a repeat urinary estrogen determination showed an excretion of only 11 plus or minus 2 gammas per twenty-four hours. At the end of the course of therapy the headaches had disappeared, the breasts were far less tender and appeared smaller and the impotence showed improvement. There was not much change in the size of the genitalia.

### COMMENT

The clinical observations and the urinary estrogen determinations justify the conclusion that the large amounts of estrogen excreted by the patient were of exogenous origin and had entered the body by absorption through the unbroken skin. The fact that the urinary estrogen content was reduced to low normal values after the patient discontinued his occupational contact with estrogenic material corroborates this view. It seems reasonable to assume that the symptoms of genital atrophy, impotence and gynecomastia were due to the effects of exogenous estrogenic hormones.

Endogenous estrogen production could be ruled out. The two possible sources of such pathologic estrogen production are a Sertoli cell tumor of the testis and an adenoma of the adrenal cortex. Physical examination of the testes established the absence of the former; the latter could be excluded by the absence of other symptoms characteristic of cortical tumors, by the decreased estrogen excretion after contact with exogenous estrogen had ceased and by favorable response to treatment.

The percutaneous absorption of steroid hormones is a well established fact.[4] It has been shown, moreover, that the efficiency of absorption depends on the vehicle in which the steroid hormone is dissolved and brought in contact with the skin. The absorption of estrogen from a fatty medium (oil, ointment) has been estimated at 10 to 15 per cent; much better absorption is obtained from phenolic solutions, and almost 100 per cent is absorbed from alcoholic solution. An aqueous medium seems to be the most unfavorable. If results are measured by the antimasculine effects of estrogens on male rodents (atrophy and retraction of testes), the percutaneous absorption of estrogen from an organic solvent is as effective as, or even superior to, the same amount of estrogen administered subcutaneously.

According to Zondek[4] not more than 3 per cent of injected estrogen can be recovered from the urine within twenty-four hours. This has been confirmed by Jailer[5] and others.[6] On the basis of a 3 per cent recovery, and a physiologic estrogen elimination of 10 gammas, the surplus of 175 gammas represents the excretional equivalent of about 6 mg. of estrogen entering the body over a twenty-four hour period. In view of the high resorption from alcoholic solutions and the high concentrations of estrogen in the solutions handled by the patient, the absorption of this amount seems possible, although percutaneous absorption of such quantities and consequent feminization have never been reported previously, to our knowledge.

It is not likely that many persons will be exposed to an occupational hazard of such magnitude; however, this case serves to emphasize the fact that clinically significant amounts of steroid hormones can be unwittingly absorbed through the skin and that harmful effects may follow if this possibility is ignored or overlooked.

### SUMMARY

A case is reported of a 44 year old man, occupationally exposed to concentrated estrogenic solutions, who absorbed percutaneously an estimated equivalent of 6 mg. of estrogen per day, with consequent genital atrophy, impotence and gynecomastia.

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From the Endocrine Division, St. Clare's Hospital, New York.

[1] Bachman, C., and Petit, D. S.: Photometric Determination of Estrogen, J. Biol. Chem. **138:** 689-704 (April) 1941.

[2] Bates, R. W., and Cohen, H.: Quantitative Fluorescent Method for the Determination of Natural Estrogens, Federation Proc. **6:** 236-237 (March) 1947.

[3] Supplied by the Schering Corp., Bloomfield, N. J.

[4] Zondek, B.: Clinical and Experimental Investigations on the Genital Functions and Their Hormonal Regulation, Baltimore, Williams & Wilkins Company, 1941.

[5] Jailer, J. W.: A Fluorometric Method for the Clinical Determination of Estrone and Estradiol, J. Clin. Endocrinol. **8:** 564-580 (July) 1948.

[6] Pincus, G., and Pearlman, W. H.: Metabolism of Estrone in Men and Non-Pregnant Women, Endocrinology **31:** 507-514 (Nov.) 1942. Heard, R. D. H., and Hoffman, M. M.: Steroids: Fate in Man of Injected Estradiol, J. Biol. Chem. **141:** 329-342 (Nov.) 1944.

# Council on Pharmacy and Chemistry

## REPORT OF THE COUNCIL

## PRESCRIPTION WRITING

*The Council has authorized publication of the following statements.* AUSTIN SMITH, M.D., *Secretary.*

### Harrison Narcotic Act and Prescriptions

The Harrison Narcotic Act is intended to control narcotic drugs so that they are used only for medical purposes. This law prohibits a pharmacist from filling an oral prescription; a written prescription must be received before the drug can be dispensed. A pharmacist can deliver narcotic drugs following a telephone order only when a genuine emergency exists. A physician cannot use his prescription form to obtain narcotic drugs for general office practice. Narcotic drugs for such use must be obtained on an official order from a qualified manufacturer or wholesale dealer. A prescription for a narcotic drug must be dated and signed on the date when issued, and it must bear the full name and address of the patient and the name, address and registry number of the practitioner. Such prescriptions must be typed or written in ink or indelible pencil. If typewritten the prescription must be signed by the practitioner. Prescriptions for narcotic drugs cannot be refilled. Narcotic prescriptions can be used only for legitimate medical purposes, responsibility for proper prescribing resting essentially with the practitioner. Narcotic prescriptions cannot be issued to addicts or habitual users of narcotics.

### Prescriptions Under the Federal Food, Drug and Cosmetic Act

In more recent years there have been developed laws that affect the prescribing and dispensing habits of physicians and pharmacists. In earlier years, with the exception of narcotics, the majority of drugs that were used by physicians were not subject to many restrictions, and it was customary to regard with considerable leniency oral prescriptions for drugs and refilling of written prescriptions without specific authorization. During the past few years state laws have been developed which prohibit the issuance of certain drugs without prescription. A local law exists in New York City. In addition, however, there is the Federal Food, Drug and Cosmetic Act, the provisions of which are not yet familiar to all members of the medical profession, but which, nevertheless, are intimately concerned with the use of drugs. Furthermore, new interpretations are being placed on these provisions, so that it is necessary for members of the medical profession to be fully aware of current restrictions on prescribing and dispensing habits if they wish to avoid or refrain from encouraging violations of this federal law.

While the Federal Food, Drug and Cosmetic Act has been regarded by many who are not familiar with its provisions as being concerned essentially with questions of accurate labeling, prevention of adulteration and safety, its provisions, on the basis of recent court decisions and interpretations of the Food and Drug Administration, go beyond such concepts. Among the restrictions placed on prescribing and dispensing habits are several concerned with so-called prescription items and refills. The physician must have a proper understanding of these restrictions if he is to prevent misunderstanding and perhaps even embarrassment for himself or for his patients and the pharmacists who fill his prescriptions. Under the act a prescription is generally regarded as a written order by the physician for a specific quantity of drug to meet a patient's specific needs. A prescription, then, cannot be refilled, according to current interpretation of the Federal Food, Drug and Cosmetic Act, without specific authorization of a physician. To refill the prescription without authorization is, in the eyes of the Administration, equivalent to an over-the-counter sale. Over-the-counter sale of drugs that are prescription items is prohibited by law, and pharmacists are not permitted to dispense prescription items without a prescription or to refill such prescriptions without specific authorization. This means that the physician must authorize as many refills as he believes are necessary for the patient for whom the prescription is intended at the time he writes the prescription. If such authorization is missing from the original prescription the pharmacist, according to the administration, must assume that the physician intended the prescription be filled only once. The physician, of course, can issue instructions later for refills if such action seems indicated. These later instructions to the pharmacist may be verbal or written, but they must be issued directly to the pharmacist and not indirectly through the patient.

Prescription drugs are those which carry on the label a statement such as "Caution: To be dispensed only by or on the prescription of a physician" (or dentist or veterinarian). If such a legend is not present on the label, then the item presumably is a so-called non-Rx legend drug, in which case the labeling must bear adequate directions for use—which means for self medication. If a drug bears an Rx legend it cannot be sold without a prescription.

At times pharmacists must place on a prescription label certain warnings; for example, "Warning: May be habit forming." This is done if the drug is a narcotic or hypnotic substance named in a certain section of the Federal Food, Drug and Cosmetic Act if (*a*) the doctor does not mark the prescription order as not refillable or (*b*) refilling is not prohibited by local law. If the physician specifies in the prescription order that it may be refilled a certain number of times at stated intervals, and that it is not refillable after the last filling, none of the dispensed material is required to bear the warning label.

Another warning that occasionally must be placed on the prescription label by the pharmacist is one associated with certain potent drugs. So far, the Food and Drug Administration has decided that thiouracil, prophylthiouracil and pentaquine must bear a warning because of the possibility of untoward reactions from the use of these drugs. This warning reads: "Warning: This drug may cause unfavorable reactions in some individuals. Your physician has explained or will explain to you the symptoms that must be watched for and precautions that must be taken to guard against ill effects. Do not take in larger doses, or for a longer time than specifically directed by the physician."

Physicians who dispense as a bona fide part of their professional practice and who by oral statements impress on the patient adequate directions for use and warnings about probable unfavorable reactions are not subject to the labeling requirements of the law that apply to pharmacists in filling prescriptions. Nevertheless, it would be in the interest of safety for such a physician to supplement his oral directions and warnings with label notations on the dispensed package.

Physicians whose dispensing is not a bona fide part of their professional practice are, of course, subject to the same requirements that apply to pharmacists.

The Food and Drug Administration does not issue an official list of drugs which may be sold only on prescriptions. However, any item that bears the prescription legend is limited to issuance by prescription, and a prescription for such an item must be written, as oral prescriptions can be recognized by a pharmacist only in times of emergency.

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SATURDAY, AUGUST 6, 1949

## COMMITTEE OF THE NATIONAL ACADEMY OF SCIENCES ON THE INVESTIGATION OF CORTISONE

The recent report by Hench, Kendall, Slocumb, and Polley of the dramatic effectiveness of the adrenal cortical steroid, Cortisone (first isolated by E. C. Kendall), in the treatment of rheumatoid arthritis developed the difficult problem of distributing the limited amount of the substance obtainable for the rest of 1949. Originally obtained from the cortex of the adrenal gland, *Cortisone is now being prepared from a bile acid.* While the value of Cortisone in controlling the symptoms of rheumatoid arthritis is regarded as established, much remains to be learned concerning its possible untoward effects, its usefulness in other diseases and the mechanism of its action. The small amount which can be made during the last five months of 1949 will be used only for clinical and experimental research and will be made available to those investigators who may best provide the information needed to insure its safe and effective use.

The Research Corporation, a nonprofit organization which administers patents in the interest of public welfare and for the furtherance of scientific research, has aided in the development of the processes for making Cortisone. The corporation will continue to further the development of these processes and to stimulate research on the mechanisms of action of the substance. In fulfilling these functions, the Research Corporation requested the President of the National Academy of Sciences to appoint a Committee on Investigation of Cortisone, with assurance that its recommendations will be accepted as final with respect to the available supply during 1949.

The membership of the committee, appointed with the sanction of the council of the academy, includes Chester S. Keefer, chairman, Hans T. Clarke, E. A. Doisy, Robert F. Loeb, C. N. H. Long, E. K. Marshall Jr. and Joseph T. Wearn. David E. Price has been appointed to act as liaison between the committee and the U. S. Public Health Service.

The committee is planning arrangements designed to utilize to the fullest possible extent the resources of the National Research Council and the information and advice of experienced and competent investigators in the United States and Canada. Not only will rheumatism and other diseases for which relief may be anticipated continue to be investigated, but also aspects of physiology and pharmacology which are basic to fuller understanding of Cortisone.

While the academy does not have funds with which to buy Cortisone or to support investigations, the needed funds will no doubt become available from both public and private sources. The committee has accepted this responsibility because of the conviction that a new discovery of the greatest importance to the health and welfare of countless persons has been made and that it is vital to promote its most rapid and intelligent development.

Applications for a supply of Cortisone must be submitted on a form that can be obtained from the chairman of the committee, Dr. Chester S. Keefer, 2101 Constitution Avenue, Washington 25, D. C. Consideration will be given only to requests from institutions where adequate facilities for investigation and clinical control are available.

## INACTIVATION OF HEPATITIS VIRUS WITH ULTRAVIOLET RAYS

Jaundice after the administration of human blood products is now a well recognized possibility. The jaundice is readily distinguishable from hemolytic icterus, which may develop promptly after transfusion with incompatible blood. Clinically the condition resembles epidemic hepatitis. The incubation period is unusually long, two to three months, in contrast with the twenty to forty day period believed to occur in epidemic hepatitis.

The quantity of icterogenic agent involved in transmission of the infection may be extremely small, as demonstrated by Bradley and his co-workers,[1] who produced jaundice in human volunteers by the administration of as little as 0.1 cc. of homologous serum. MacCallum and Bauer, Sheehan, and Droller[2] have incriminated the syringe and the needle used either for injection or for taking blood as capable of harboring and transmitting the infective agent. Mendelssohn and Witts demonstrated that some of the blood is sucked back into the vein when blood is taken from a vein with a syringe; this occurs when the tourniquet is released. If the syringe is not sterile, the patient is exposed to infection. MacCallum and Bauer[3] showed that the icterogenic agent survived heating at 56 C. for one hour, and Oliphant found that the jaundice-producing agent is filtrable, survives drying in vacuum, storage for long periods in serum at 4 C. and heating to 56 C. for one-half hour in the dried state.

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[1] Bradley, W. H.; Loutit, J. F., and Maunsell, K.: An Episode of "Homologous Serum Jaundice," Brit. M. J. **2:** 268-269 (Aug. 26) 1944.

[2] Cited in Syringe Transmitted Hepatitis, editorial, J. A. M. A. **129:** 278-279 (Sept. 22) 1945.

Effective sterilization of syringes and needles involves thorough cleansing followed by sterilization in the hot air oven (160 C. for one hour) or in the autoclave or by boiling for not less than fifteen minutes. Malmros and his co-workers[4] stated the belief that the risk of infection can be eliminated by the use of sterile needles alone without syringes at venepuncture and by the provision of a sufficient number of syringes to permit a fresh sterilized instrument's being used for each patient.

The suggestion that a connection between the needle and the syringe could be used to prevent the contamination of the syringe nozzle in mass inoculations is deprecated by Janeway, who does not believe that there is any adequate substitute for the use of an individual syringe and needle for each patient.

Oliphant[5] demonstrated in inoculation experiments on human beings that irradiation of icterogenic serum with ultraviolet rays inactivated the infective agent. This suggested the possibility that ultraviolet irradiation might be useful in processing potentially icterogenic blood and blood products. A new method of rapidly sterilizing suspensions of bacteria and viruses has been developed by Oppenheimer and Levinson. The method consists of exposing rapidly flowing thin films of liquid for fractions of a second to a new and powerful source of ultraviolet rays emitting intense radiation of 2,537 angstrom and 1,849 angstrom wavelengths. Stokes[6] and his co-workers, utilizing a Habel-Sockrider type of apparatus for irradiating the icterogenic serum, inoculated 11 volunteers with irradiated icterogenic serum. None showed any evidence of hepatitis. Studies of the irradiated plasma did not indicate any alteration of the electrophoretic pattern. By chemical fractionation methods, the plasma proteins remained essentially normal. Of the 15 volunteers who received nonirradiated icterogenic serum, 3 showed hepatitis with jaundice, 1 hepatitis without jaundice and 3 presumptive hepatitis. This experiment supports the work of Oliphant and strongly favors the routine use of exposure to ultraviolet rays of serum and plasma under properly controlled conditions.

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[3] MacCallum, F. O., and Bauer, D. J.: Homologous Serum Jaundice: Transmission Experiments with Human Volunteers, Lancet, **1:** 622-627 (May 13) 1944.

[4] Malmros, H.; Wilander, O., and Herner, B.: Inoculation Hepatitis, Brit. M. J. **2:** 936 (Nov. 27) 1948.

[5] Oliphant, J. W., and Hollaender, A.: Homologous Serum Jaundice: Experimental Inactivation of Etiologic Agent in Serum by Ultraviolet Irradiation, Pub. Health Rep. **61:** 598-602 (April 26) 1946.

[6] Stokes, J., Jr.; Blanchard, M.; Neefe, J. R.; Gellis, S. S., and Wade, G. R.: Methods of Protection Against Homologous Serum Hepatitis: I. Studies on the Protective Value of Gamma Globulin in Homologous Serum Hepatitis SH Virus, J. A. M. A. **138:** 336-341 (Oct. 2) 1948. Blanchard, M. C.; Stokes, J., Jr.; Hempil, B.; Wade, G. R., and Spizizen, J.: Methods of Protection Against Homologous Serum Hepatitis: II. The Inactivation of Hepatitis Virus SH with Ultraviolet Rays, J. A. M. A. **138:** 341-343 (Oct. 2) 1948.

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## INSULIN ECONOMY

In anticipation of a predicted shortage of insulin in the near future, Johlin[1] of the Department of Biochemistry, Vanderbilt University, has suggested a plausible method for economy in the use of insulin. Experiments on rabbits indicate that the conventional dosage of insulin can be reduced by half through the use of certain amino acid adjuvants.

Earlier investigators[2] found that the normal blood sugar level of rabbits can be increased or decreased by administrations of adequate doses of amino acids. Schenk[3] found that glycine was the most effective of the amino acids which decreased the blood sugar level. Given orally 1.5 Gm. glycine, produced hypoglycemia, which reached its maximum in about one hour and disappeared within eight hours. Schenk found that self-administered glycine produced similar hypoglycemia in man.

As a preliminary to tests of the adjuvant action of glycine in insulin therapy, Johlin determined the minimum convulsive dose of insulin for adult rabbits. This varied from 0.6 to 0.7 unit per kilogram of body weight for different rabbits. Injection of half of the convulsive dose caused the blood sugar level of rabbits to fall from 90 mg. to 50 mg. per hundred cubic centimeters by the end of one hour, with full recovery by the end of five hours. Simultaneous injection of 3 mg. glycine per kilogram of body weight did not cause appreciable change in the severity or duration of this half-convulsive hypoglycemia. When the same rabbits were retested some weeks later, however, the animals reached the convulsive state with the half-convulsive dose. There was thus a twofold increase in insulin reaction due to previous glycine injection.

This heightened insulin reaction was confirmed in rabbits repeatedly given injections with glycine alone. Tested two weeks to three months later, the animals reacted to the half-convulsive dose with hypoglycemia approaching the convulsive level. The blood sugar fell to 40 mg. per hundred cubic centimeters after one hour and only partially recovered to the 60 mg. level after five hours.

Johlin concludes from such data that repeated injections of glycine in rabbits increase the subsequent therapeutic effect of insulin for prolonged periods. Johlin has not offered a theoretical explanation for this insulin hypersensitivity. If similar prolonged booster effects can be demonstrated in man, a practical method of insulin economy will have been found.

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[1] Johlin, J. M.: Proc. Soc. Exp. Biol. & Med. **70:** 425, 1949.

[2] Pollak, L.: Biochem. Z. **127:** 120, 1922. Izumi, K.: Biochem. Z. **248:** 383, 1932.

[3] Schenk, E. G.: Arch. f. exper. Path. u. Pharmacol. **167:** 201, 1932.

# Current Comment

## TOXIC EYE HAZARDS

"Accident Facts," published by the National Safety Council, reports that approximately 75,000 occupational eye injuries occur each year; of these, 5,000 are permanent. Increased industrialization has resulted in a corresponding rise in injuries of the eyes. The Joint Committee on Industrial Ophthalmology established by the Council on Industrial Health of the American Medical Association prepared a "Manual on Toxic Eye Hazard,"[1] useful for both professional and lay personnel. In chapter 1, Dr. Ralph S. McLaughlin of Charleston, W. Va., and Thomas A. Walsh of the American Optical Company discuss the various standards and tests for eye protection equipment and a well organized eye protection program. A complete description and discussion of standards and tests of equipment for protection of the eyes was prepared for the Joint Committee by J. M. McGreevy and L. Banet from their experiences in naval shipyards. Chapter 2, prepared by Prudence Van Arsdell, presents detailed tables of individual chemicals, organic and inorganic, giving the name, trade name and main effects of these chemicals on the eye. Chapter 3 discusses first aid and emergency treatment of chemical eye injuries. A rather extensive bibliography on medical and surgical treatment of injuries of the eye is appended. The research behind this project has taken two years, and a prodigious amount of work has been done by the authors. The Committee feels that the manual should be in the hands of every ophthalmologist, medical director, industrial nurse, safety director and public health officer and all others interested in eye conservation.[1]

## ELECTROSHOCK IN PSYCHOSES

At the time of the Annual Session of the American Psychiatric Association, an official statement on the use of electroshock was issued by the president, Dr. William C. Menninger, and by Dr. Nathan K. Rickles, president of the Electroshock Research Association. The statement follows:

> Electroshock therapy is accepted today as the most effective physical agent in the successful treatment of the majority of the affective psychoses when given by properly qualified psychiatrists.
>
> It should be stressed that at no time is electroshock advanced as a cure-all, but only as one very effective agent in selected classes of mental illness. It should always be preceded by a complete and thorough psychiatric study of the patient which includes an evaluation of his mental and physical status, his family and his environment, and also be followed with adequate psychosocial study and psychotherapeutic guidance.

This decision should be known particularly to general practitioners, since at least two thirds of acute psychoses are first seen by general practitioners.

## GLUTAMINASE

Current research is turning with increasing emphasis to a consideration of the chemical reactions of the individual cell. These reactions are under the control of enzymes, and in the living cell they are regulated by those factors which control the activity of the enzymes; in death, regulatory forces are largely removed and the chemical reactions proceed uninhibited to their equilibrium states. The factors which control the activity of one of these enzymes, renal glutaminase, have been studied extensively by a number of workers.[1] This enzyme acts on glutamine, a constituent of normal blood, to supply ammonia which is used in excretion of acids as their ammonium salts and the maintenance of the normal acid-base balance. When kidney tissue slices are incubated with glutamine, the formation of ammonia is increased by the presence of the sodium salts of pyruvic, phosphoric and beta-hydroxybutyric acids. The control of the activity of glutaminase in the living animal thus appears to be under the automatic control of those substances which require the formation of urinary ammonia. Beta-hydroxybutyric acid, the substance which is in large part responsible for the development of acidosis of pathologic states, is the most effective of the substances studied for the stimulation of ammonia formation.

## AVAILABILITY OF VITAMIN A

In securing data on the requirement for a dietary essential, some reliable criterion of adequacy is used; also necessary is knowledge of the amount of the substance under investigation which is consumed. In making such a study of the human requirement for vitamin A, Callison and Orent-Keiles[1] estimated the intake of vitamin A activity from raw, quick-frozen and pressure-cooked carrots, using both the biologic assay with rats and a chemical method whereby the carotene was extracted and measured. The experimental animals utilized the carotene from carrots only about one third as well as they did that from peas, spinach or an oil solution of carotene. The resulting bio-assay on carrots gave values far smaller than those secured by the chemical method. Recently, the government investigators[2] studied the availability of carotene (vitamin A activity) from carrots and from sweet potatoes as indicated by the comparison of the results of bio-assay with those from chemical determination. Evidently the laboratory rat does not utilize all of the carotene contained in these vegetables; only 34 per cent was obtained from sliced carrot, 41 per cent from carrot purée and 37 per cent from sweet potato. Naturally, the question of availability of nutrients in plant tissues in human nutrition is raised by the foregoing observations. It would appear advisable to revise the tables of food composition which are widely used by dietitians so that the factor of biologic availability is included in the calculations of requirements. The possible disparity between the quantity of nutrients eaten and the amount absorbed cannot be ignored.

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[1] Toxic Eye Hazards: Manual Prepared by the Joint Committee on Industrial Ophthalmology of the American Medical Association and the American Academy of Ophthalmology and Otolaryngology, New York, *The National Society for the Prevention of Blindness, Inc., 1949. Price $1.*

[1] Mylon, E., and Heller, J. H.: Am. J. Physiol. **154**: 542, 1948.

[1] Callison, E. C., and Orent-Keiles, E.: J. Nutrition **34**: 153 (Aug.) 1947.

[2] Callison, E. C.; Orent-Keiles, E.; Frenchman, R., and Zook, E. G.: *J. Nutrition* **37**: *139 (Jan.) 1949.*

# ORGANIZATION SECTION

## Washington Letter

*(From a Special Correspondent)*

Aug. 1, 1949.

### Dr. Hench Heads Federal Panel on Arthritis

Establishment of a new study section on arthritis and rheumatic diseases, headed by Dr. Phillip Hench of Mayo Clinic, is part of the current reorganization of advisory panels serving National Institutes of Health. Appointment of Dr. Hench as chairman was announced July 31 by Federal Security Administrator Oscar R. Ewing. Nine other investigators have accepted appointment to the new section. They are Drs. Walter Bauer, Boston; Granville Bennett, Chicago; Jerome W. Conn, Ann Arbor, Mich.; W. Paul Holbrook, Tucson, Ariz.; Robert Loeb, New York City; Fred Moore, Los Angeles; Jane A. Russell, New Haven, Conn.; Emil L. Smith, Salt Lake City, and Alfred L. Wilds, Madison, Wis.

### School Health Services Bill Is Modified

The House subcommittee on health legislation approved the school health services bill (S. 1411) in revised form and submitted it to the House Interstate and Foreign Commerce Committee late in July. The subcommittee did not change the portion of the bill which permits states to provide for treatment of children without regard to their families' economic status. Heeding arguments made by the American Optometric Association, the legislators have amended the bill to include optometry among the health services recognized. Other changes deal with provisions affecting pupils of parochial schools.

### Quarterly Lobbying Reports Made Public

The Committee for the Nation's Health, whose efforts are devoted chiefly to stimulating public sentiment for compulsory health insurance, has informed the Clerk of the House that its income for the second quarter of 1949 was $5,080.95. The sole contributor of $500 or more was Mrs. W. H. Durham, Berkeley, Calif., according to the committee's quarterly lobbying report. An amended report for the first quarter showed contributions in excess of $40,000. Principal donors were Lessing Rosenwald, Mrs. Marion R. Ascoli, Mrs. Adele Levy, Mrs. Edith R. Stern and William Rosenwald, who gave $6,666.67 each, and Mr. and Mrs. Albert D. Lasker, $5,555.56. Expenditures for the first half of the year totaled $55,911.90.

The American Medical Association filed a report showing that the assessment fund was increased by $832,377.20 between April 8 and June 30. This brought the total to date to $1,984,010.90. Expenses of the educational campaign conducted by Whitaker and Baxter totaled $350,109.66 in the second quarter.

The Indiana State Medical Association, in its report, listed contributions by Eli Lilly & Company ($10,000), Mead Johnson & Company ($5,000) and the Indianapolis Medical Society ($2,000).

The American Osteopathic Association, National Chiropractic Insurance Co., American Hospital Association, American Dental Association and American Parents Committee were among other organizations filing quarterly reports.

### USPHS Appoints Its First Pharmacist Director

Raymond Kinsey, a career man in Public Health Service since 1914 and a member of its commissioned corps since 1930, has been promoted to the rank of pharmacist director. He is the first pharmacist officer to achieve director grade.

### Senator Taft Among Critics of Department of Welfare

The Senate Committee on Expenditures, which is taking testimony on the Truman plan to transform the Federal Security Agency into a Department of Welfare, heard strenuous objections on July 28 from Senator Robert A. Taft of Ohio. He stated, in substance, that Public Health Service (formerly in the Treasury Department) already has lost much of its authority under FSA Administrator Ewing and the trend in that direction would be accelerated if it became part of a Department of Welfare.

Among witnesses scheduled to be heard before the hearings close are Dr. Frank Borzell, for the American Medical Association, and Robert P. Fischelis, representing the American Pharmaceutical Association.

Previously the Senate Committee on Expenditures heard dissenting testimony by Dr. James Raglan Miller, American Medical Association; Dr. Robert E. S. Young, Association of American Physicians and Surgeons; Dr. J. J. Montfort, Arkansas Medical Society, and Dr. F. Harold Gale, American Dental Association. They pointed out that the best solution would be establishment of a Department of Health and expressed doubt that subordination of government health activities to a layman Secretary of Welfare would be in the best interests of the people.

### $3,044,140 in Mental Health Grants Awarded

FSA Administrator Ewing on July 28 announced $489,584 in federal grants to continue financing of 35 research projects in the neuropsychiatric field and $2,554,556 for subsidization of training in psychiatry, neurology, clinical psychology, psychiatric nursing and psychiatric social work. The awards had been recommended by the National Advisory Mental Health Council and approved by Dr. Leonard A. Scheele, Surgeon General. Additional grants for new projects will be announced in the near future. The training grants include stipends for 456 graduate students.

### Bureau of Internal Revenue Disclaims "Crackdown" on Doctors

No political significance should be attached to the fact that tax liens have been filed against a number of physicians in various parts of the country and that some others face criminal action on evasion charges, according to an official spokesman for the Bureau of Internal Revenue. Taking cognizance of charges that a campaign is on to intimidate the medical profession against opposing the Administration program for compulsory health insurance, the Revenue Bureau official said that such allegations are wholly without foundation. Since the end of the war, he explained, a larger percentage of income tax returns filed by doctors have been subjected to "verification," and the result has been the discovery of a great number of cases in which insufficient taxes were paid. Substantiating his argument that the government is conducting no special tax drive against physicians or members of any other profession and that politics is not involved, the official pointed out that prominent members of the Democratic party have been among the defendants in some of the most noteworthy tax law violation cases of the last few years.

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## PUBLIC RELATIONS CONFERENCE

The second annual medical public relations conference has been scheduled for November 5-6 in Chicago, immediately following the Secretaries and Editors Conference on November 3-4. The meeting this year will be built around the state medical society public relations chairman—providing him ample opportunity to exchange ideas and to present and receive information pertinent to his activities and responsibilities.

As a result of the success of the one day medical public relations conference in St. Louis last November, this year's meeting has been expanded to a day and a half, opening the morning of Saturday, November 5, and closing with a luncheon on Sunday, November 6.

Invited are public relations committee chairmen, executive secretaries and public relations directors of state medical societies and of county medical societies which maintain executive offices. Some state presidents and other public relations staff members will undoubtedly attend as they did in St. Louis. Conference arrangements are being handled by the A. M. A. Public Relations Department headed by Lawrence Rember.

## DOCTORS DEPART ON ALASKAN MEDICAL MISSION

Under sponsorship of the United States Department of Interior and the American Medical Association, five physicians left July 16 for Anchorage, Alaska, for a two week session of conferences and clinics. This was the third time in five years that medical teams have visited Alaska under Department of Interior–A. M. A. sponsorship.

The conference will be conducted by five specialists to provide Interior Department medical officers now serving in remote areas in Alaska with an intensive series of seminars, demonstrations, clinics and consultations based on late technics and developments in the fields of internal medicine, general surgery, obstetrics and gynecology, tuberculosis and ophthalmology.

At the same time eight other physicians volunteered to go to Alaska to replace the Interior Department doctors, so that they could leave their outlying posts to attend the seminar.

The mission, which departed from Washington in a transport plane provided by the U. S. Air Force, included Drs. Elliott B. Hay, Houston, Texas; Edward N. Smith, Oklahoma City; Albert N. LeMoine Jr., Kansas City, Mo.; Harry Julius Isaacs, Chicago, and George C. Turner, Chicago.

# Medical Legislation

## STATE LEGISLATION

### California

**Bills Enacted.**—H. Res. 239 was adopted June 27, 1949. It provides for the creation of an interim committee to study and analyze, among other things, voluntary plans for **hospital and/or health insurance** or plans operating to protect persons from the high costs of sickness and accident in this state. H. Res. 292 was adopted July 1, 1949. It provides for the creation of an interim committee to study, among other things, the feasibility of establishing and maintaining institutions for the treatment, custody and care of **alcoholics and chronic inebriates.** A. 252 has become chapter 765 of the Laws of 1949. It makes it a misdemeanor for any person to perform an **autopsy on a dead body** without having first obtained the written authorization of the coroner or other authorized public officer or the person who has the right of disposition of the body. A. 1010 has become chapter 756 of the Laws of 1949. It provides that any person licensed to practice medicine in another state who complies with the requirements of the California Medical Practice Act with respect to registration with the board and graduation from a school approved by the board may be **appointed to a medical staff** within a state institution under the Department of Corrections and under supervision of a licensed physician and surgeon may treat persons under the jurisdiction of such state institution for a period not to exceed one year. Qualified physicians and surgeons for such purpose cannot be recruited in the state of California. At the end of the year the physician and surgeon must have secured a physician's and surgeon's certificate in order to continue as a member of the medical staff. Until such person has obtained a physician's and surgeon's certificate he shall not engage in the practice of medicine and surgery in the state except to the extent provided for in this law. A. 1948 has become chapter 794 of the Laws of 1949. It amends the business and professions code by providing that a physician who served in any of the armed forces of the United States and is included within the definition of the term "veteran" should have the same rights and privileges under the medical practice act as **medical officers in the United States Army, Navy or Public Health Service.**

### Oklahoma

**Bills Enacted.**—H. 54 was approved May 31, 1949. It amends the hospital licensing law by exempting therefrom any place maintained primarily for the purpose of providing a home or place to live for **indigent aged persons.** H. 162 was approved June 6, 1949. It prohibits the delivery of **barbiturates** except by a pharmacist on an original prescription from a person licensed by law to prescribe and administer barbiturates. The delivery of barbiturates by a physician in the course of his practice is exempted from the provisions of this law. H. 178 was approved May 23, 1949. It provides regulations for the incorporation and licensing of **charitable and benevolent nonprofit hospital service** and indemnity corporations and nonprofit medical service and indemnity corporations. H. 179 was approved June 9, 1949. It amends the medical practice act by authorizing the board of medical examiners to require all applicants for licensure to present a properly verified certificate that they have served a **one year's internship** in a general **hospital** approved and recognized by the board. H. 180 was approved May 31, 1949. It supplements the basic science act by authorizing the issuance of a certificate of ability in the basic sciences to **physicians, chiropractors and osteopaths** who were licensed in the state of Oklahoma at the time the basic science act was passed in 1937 either on the basis of examination or reciprocity. H. 206 was approved June 6, 1949. It makes it unlawful for any organization to require an **applicant for employment,** as a condition of employment, to submit to or take a physical or medical examination without providing such examination at no cost to the applicant. H. 311 was approved May 31, 1949. It authorizes the Oklahoma **Spastic Paralysis Commission** to establish and maintain the Oklahoma Cerebral Palsy Institute and to furnish care, maintenance, training, treatment equipment, education and rehabilitation to persons afflicted with spastic paralysis within said institute. H. 437 was approved June 6, 1949. It is a **mental health law.** S. 171 was approved May 16, 1949. It amends the law relating to **narcotic drugs** by including isonipecaine, amidone, isoamidone and keto-bemidone within the definition of the term "narcotic drugs." S. 172 was approved May 16, 1949. It authorizes the board of nurse examiners to issue licenses to qualified persons desiring to practice as a **"Licensed Nursing Attendant,"** which is defined to mean a person licensed as such by the Board of Nurse Examiners to perform such duties as are required in the physical care of patients but not having the technical understanding necessary for and required of professional nurses. S. 253 was approved June 2, 1949. It amends the medical practice act by authorizing the **board of medical examiners** to issue a temporary license to any applicant eligible for permanent license who desires a license only for the purpose of serving a residency in the state in hospitals approved for resident training or the board. Such licenses would expire at the end of one calendar year or at the expiration of the resident training but they may be renewed annually for not to exceed two additional years on approval of the board. S. 301 was approved June 2, 1949. It authorizes the state department of public health to create and maintain a **cancer control division** to promote a program for the prevention of cancer.

### Wisconsin

**Bill Introduced.**—A. 743, to amend the law relating to the **use of cats or dogs** for experimental purposes, proposes to make it unlawful for any person to take or send outside the state or to purchase or otherwise acquire in this state for the purpose of taking or sending outside the state any living cat or dog to be used for any medical, surgical or chemical investigation, experiment or demonstration.

**Bills Enacted.**—A. 11 has become chapter 402 of the Laws of 1949. It provides for the creation of a **director of nursing education** and also provides regulations for the licensing of practical nurses. A. 438 has become chapter 438 of the Laws of 1949. It amends the **chiropractic practice act** by setting forth the grounds for the revocation or suspension of a license to practice chiropractic. A. 472 has become chapter 297 of the Laws of 1949. It eliminates from the annual registration requirements of **chiropractors** the former provision that at the time of such renewal the applicant must present satisfactory evidence that he has attended at least one of the two day educational programs conducted by the Wisconsin Chiropractic Association. A. 475 has become chapter 457 of the Laws of 1949. It provides that consent for a licensed physician to conduct a **postmortem examination** of the body of a deceased person shall be deemed sufficient when given by whichever one of the following assumes custody of the body for purposes of burial: father, mother, husband, wife, child, guardian, next of kin or, in the absence of any of the foregoing, a friend or a person charged by law with the responsibility for burial. A. 642 has become chapter 431 of the Laws of 1949. It provides that **osteopathic and medical applicants** shall be given the same examination in all subjects and shall be given the same license.

# Coming Medical Meetings

Aero Medical Association, New York, Aug. 29-Sept. 2. Dr. Thomas H. Sutherland, 214 S. State St., Marion, Ohio, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., The Homestead, Sept. 8-10. Dr. Leroy A. Calkins, University of Kansas Medical Center, Kansas City 3, Kan., Secretary.

American Congress of Physical Medicine, Cincinnati, Netherlands Plaza Hotel, Sept. 6-10. Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secretary.

American Hospital Association, Cleveland, Sept. 26-29. Mr. George P. Bugbee, 18 East Division St., Chicago, Executive Secretary.

American Roentgen Ray Society, Cincinnati, Oct. 4-7. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Iowa, Secretary.

Colorado State Medical Society, Denver, Shirley-Savoy Hotel, Sept. 20-23. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver, Executive Secretary.

Indiana State Medical Association, French Lick, Sept. 25-27. Mr. Ray E. Smith, 1021 Hume-Mansur Bldg., Indianapolis 4, Executive Secretary.

International Congress of Biochemistry, Cambridge, England, Aug. 19-25. Lieut. Col. Francis J. Griffin, 56 Victoria St., London, W.C.1, Organizer.

International Neurological Congress, Paris, France, Sept. 5-10. Dr. Raymond Garcin, 19 rue de Borgogne, Paris, General Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel and Civic Auditorium, Sept. 21-23. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

National Medical Association, Detroit, August 8-12. Dr. John T. Givens, 1108 Church St., Norfolk, Va., Secretary.

Nevada State Medical Association, Elko, Sept. 29-Oct. 1. Dr. Roland W. Stahr, 118 California Ave., Reno, Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, Hotel William Penn, Sept. 26-29. Dr. W. F. Donaldson, 8104 Jenkins Arcade, Pittsburgh 22, Secretary.

Utah State Medical Association, Salt Lake City, Sept. 1-3. Dr. Ray T. Woolsey, 42 S. Fifth East St., Salt Lake City 2, Secretary.

Vermont State Medical Society, Burlington, Sept. 8-9. Dr. James P. Hammond, 542 Main St., Bennington, Secretary.

Washington State Medical Association, Seattle, Olympic Hotel, Sept. 11-14. Dr. James W. Haviland, 338 White-Henry-Stuart Bldg., Seattle, Secretary.

Wyoming State Medical Society, Casper, Sept. 12-14. Dr. George H. Phelps, 1606 Capitol Avenue, Cheyenne, Secretary.

# GOVERNMENT SERVICES

## ARMY

### OFFICERS ACCEPTED FOR ADVANCED TRAINING

The following Medical Department officers have been accepted for advanced training at the civilian institutions indicated: Colonels Berna T. Bowers, Ophthalmological Study Council, Boston; Albert H. Robinson, University of Pennsylvania, Philadelphia; Lieut. Colonels William B. Draper, University of Pennsylvania, Philadelphia; Raymond M. Williams, University of Pennsylvania, Philadelphia; Orland S. Olsen, University of Cincinnati, Ohio; Merle E. Smith, Harvard University School of Public Health, Boston; Majors Kenneth E. Hudson, University of Pennsylvania, Philadelphia; Donald S. Myers, Harvard University, Boston; Robert S. Lockwood, University of Nebraska, Omaha; Theodore S. Malinowski, University of Indiana, Indianapolis; William A. Collins Jr., Ohio State University, Columbus, Ohio, and Captain James G. Wood Jr., Massachusetts General Hospital, Boston. Colonels Lawrence A. Matternes, University of Pennsylvania, Philadelphia, general surgery; Tom Whayne, Harvard University, Boston, public health; James O. Gillespie, University of California, San Francisco, endocrinology; Lieut. Colonels Fratis L. Duff, Johns Hopkins University, School of Hygiene and Public Health, Baltimore, public health; Stuart I. Draper, University of California, School of Public Health, Berkeley, public health; Majors Phillip M. Nabbe, Minnesota Department of Health, St. Paul, public health, and Albert Dresner, Cook County Graduate School of Medicine, Chicago, allergy.

### AMERICAN REGISTRY OF PATHOLOGY

The American Registry of Pathology is one of the four major departments of the Army Institute of Pathology. The first registry in the group which now comprises the American Registry of Pathology was established in the Army Medical Museum by the Academy of Ophthalmology and Otolaryngology in 1922. Over the years, this registry has accumulated more than 26,000 ophthalmologic specimens and has been the basis of many important researches in ophthalmic pathology. As additional registries were organized they were grouped in an overhead organization known as the American Registry of Pathology under the auspices of the National Research Council. Under the direction of Colonel James E. Ash, the activities of the American Registry of Pathology were greatly expanded. There are now 19 individual registries, which in the aggregate cover practically all of the specialty fields in medicine and contain nearly 75,000 cases.

### EDUCATIONAL TRAINING

The following medical officers have been accepted for advanced training in civilian institutions:

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| Clifford A. Gray, Col. | Mayo Clinic, Rochester, Minn. | Radiology |
| Carlton W. Sargent, Lieut. Col. | University of Georgia, Augusta, Ga. | Obstetrics and gynecology |
| Augustus A. Hall, Lieut. Col. | Bellevue Hospital, New York | Internal medicine |
| Harold W. Glascock Jr., Lieut. Col. | Columbia University, New York | Curriculum development and adult education |
| Urban L. Throm II, Major | Cornell University Medical College, New York | Dermatology and syphilology |
| John W. White, Capt. | Gallinger Municipal Hospital, Washington, D. C. | Surgery |
| William A. Graber, First Lieut. | Cook County Hospital, Chicago | Obstetrics and gynecology |

### CERTIFIED BY SPECIALTY BOARDS

The following Regular Army Medical Corps officers have recently been certified by the American Specialty Boards indicated:

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| Lieut. Col. Bruno Jastremski | Internal Medicine |
| Lieut. Col. Benjamin H. Sullivan Jr | Internal Medicine |
| Major Robert B. Dickerson | Internal Medicine |
| Major Aaron L. Kaminsky | Internal Medicine |
| Col. Francis W. Pruitt | Internal Medicine |
| Lieut. Col. Wayne G. Branstadt | Preventive Medicine and Public Health |
| Lieut. Col. Edward J. Dehne | Preventive Medicine and Public Health |
| Major Claude M. Eberhart | Preventive Medicine and Public Health |
| Lieut. Col. Thomas G. Faison | Preventive Medicine and Public Health |
| Lieut. Col. B. Dixon Holland | Preventive Medicine and Public Health |
| Major Gen. Edgar E. Hume | Preventive Medicine and Public Health |
| Lieut. Col. Gottlieb L. Orth | Preventive Medicine and Public Health |
| Col. Tom F. Whayne | Preventive Medicine and Public Health |
| Col. William L. Wilson | Preventive Medicine and Public Health |
| Col. Wesley C. Cox | Preventive Medicine and Public Health |
| Col. Rufus L. Holt | Preventive Medicine and Public Health |
| Col. Don Longfellow | Preventive Medicine and Public Health |
| Col. Karl R. Lundeberg | Preventive Medicine and Public Health |
| Col. Thomas E. Patton | Preventive Medicine and Public Health |
| Lieut. Col. Dell F. Dullum | Radiology |
| Major Harold F. Bertram | General Surgery |
| Major Roy C. Rounds | Orthopedic Surgery |
| Col. Conn L. Milburn | Pediatrics |
| Lieut. Col. Louis S. Leland | Dermatology and Syphilology |
| Major Abram A. Bennesson | Clinical Pathology |
| Major Gilbert B. Stansell | Anatomic Pathology |
| Col. James H. Forsee | Thoracic Surgery |
| Lieut. Col. John H. King Jr | Ophthalmology |
| Lieut. Col. Edward A. Zimmermann | Gynecology and Obstetrics |
| Major Humbert L. Riva | Obstetrics and Gynecology |

## NAVY

### POSTGRADUATE INSTRUCTION

The following Regular Navy Medical Officers have been nominated for postgraduate instruction under the graduate medical training program in the institutions indicated: Commanders Sidney A. Britten of Syracuse, N. Y., to instruction in public health at Harvard School of Public Health, Boston; Leonard J. Hahne of Savannah, Ga., to a fellowship in ophthalmology at the Illinois Eye and Ear Infirmary, Chicago; William S. Wray of Northfork, W. Va., to instruction in pediatric radiology at Children's Medical Center, Boston; Lieutenants Gustave T. Anderson of North Platte, Neb., to a residency in dermatology and syphilology at the Naval Hospital, San Diego; Henry G. Wagner of Dayton, Ohio, to a fellowship in research at Johns Hopkins University, Baltimore; Lieutenants (jg) Carleton J. Brown of New London, Conn., to a residency in pediatrics at the Boston Dispensary, Boston; Kenneth A. Parmelee of Stratford, Conn., to a residency in radiology at the Naval Hospital, St. Albans, L. I., N. Y., and William R. True of Bethany, Mo., to a residency in ophthalmology at the Naval Hospital, Bethesda, Md.

### PORTRAIT OF CAPTAIN BAINBRIDGE

A portrait of the late Captain William Seaman Bainbridge, the gift of his widow, was unveiled in the Bureau of Medicine and Surgery July 8. The acceptance was by Rear Admiral C. A. Swanson, the Surgeon General, in the presence of Mrs. Bainbridge, her daughter and two sons and many others from the military and medical professions. Captain Bainbridge, who was one of the first doctors to enter the Navy Medical Corps Reserve, served with distinction in the Expeditionary Forces in the first World War on the French, British and Belgian fronts. During his long period of private practice in New York City, he made hundreds of colored models of cancer of the mouth, face and other parts of the body, and these he willed to the Navy, which has them on display in the Medical Center at Bethesda, Md.

### FIRST ACTIVE DUTY

The following Lieutenants (jg) in the Medical Corps Reserve have been nominated for their first active duty as interns:

J. K. Banks of Raleigh, W. Va., graduate of the University of Arkansas School of Medicine.

Harry S. Binakonsky of Jeannette, Pa., graduate of the University of Pittsburgh School of Medicine.

Donald R. Buechel of Wichita, Kan., graduate of the University of Kansas School of Medicine.

Robert C. Drips of Rochester, Minn., graduate of the University of Arkansas School of Medicine.

Stratton R. Easter of Oakland, Calif., graduate of the St. Louis University School of Medicine.

Robert R. Foster of Portsmouth, Ohio, graduate of the George Washington University School of Medicine.

Jesse M. Hunt Jr. of Wickliffe, Ky., graduate of the University of Louisville Medical School.

Richard A. Lavin of Liverpool, Ohio, graduate of the University of Pittsburgh Medical School.

James J. Lawson Jr. of Arlington, Va., graduate of Tufts College Medical School.

Gilbert L. Nicklas of Baltimore, graduate of the University of Maryland School of Medicine.

Edward A. Schauer of Morrisville, Pa., graduate of Jefferson Medical College.

Bernard C. Smith of Bradford, Ark., graduate of the University of Arkansas School of Medicine.

### NEW REGULAR OFFICERS

The following reserve medical officers on active duty have been appointed to the regular Navy: Capt. John M. Whalen, Grand Rapids, Mich.; Lieut. Comdr. Joseph C. Pinto, Philadelphia, and Lieutenants (jg) Wayne C. Brady, Columbia, S. C.; Duwayne D. Gadd, Saginaw, Mich.; John H. Heald, Billings, Mont.; Paul H. Pennypacker, Pottstown, Pa.; Charles O. Parker, Waycross, Ga., and Donald O. Ward, Roxbury, Mass.

### PERSONALS

The following medical officers have been nominated for duty under instruction in the Navy's Graduate Medical Training Program: Comdr. Richard M. Street, to instruction in otolaryngology at the University of Pennsylvania Graduate School; Lieut. Comdr. Leo S. Madlem Jr., to a residency in psychiatry at the Naval Hospital, Philadelphia; Lieut. (jg) Lyle H. Prenzler, U.S.N.R., to a residency in psychiatry at the Naval Hospital, Philadelphia; Comdr. Thomas E. Cone Jr., U.S.N.R., of Cranston, R. I., to a residency in pediatrics at the Naval Hospital, Philadelphia; Lieut. Comdr. Bruce R. McCampbell to a fellowship in surgery at the Cleveland Clinic.

Dr. Bernard H. Cobetto of Pitcairn, Pa., and Dr. Robert R. Martelle of Beresford, S. D., have been nominated for appointment as lieutenants (jg) in the Regular Navy Medical Corps.

Lieut. (jg) Edward Martin Jr. of Boston has been appointed to the Regular Navy from the Reserve Corps.

Lieut. (jg) Walter C. Reilly Jr. of Glendale, Calif., has been nominated for his first active duty in the Medical Reserve Corps at the Naval Hospital, Long Beach, Calif.

## MISCELLANEOUS

### DR. BRUNER JOINS OAK RIDGE INSTITUTE

Dr. Harry Davis Bruner, professor and head of the Department of Pharmacology, University of North Carolina Medical School, has been appointed principal scientist in the medical division of the Oak Ridge Institute of Nuclear Studies as the no. 2 man in the institute's cancer research program. Dr. Bruner already has moved to Oak Ridge. Although the building to house the medical program is just now under construction, preliminary research problems are being undertaken in an existing wing of the Oak Ridge Hospital.

The Medical Division of the Institute is making a long range study of the treatment of malignant diseases, with particular attention being given to the use of radioactive materials and radiation. The Oak Ridge Institute is comprised of twenty-four Southern universities. It carries out a program of research, training and education in the nuclear sciences through a contract with the Atomic Energy Commission.

Dr. Bruner is the author of many original research papers and has done work on cardiovascular and pulmonary problems. In recent years, he has specialized in radiobiology. He received bachelor of science, doctor of medicine and master of sciences degrees from the University of Louisville, and a Ph.D. degree in physiology from the University of Chicago, studying under Dr. A. J. Carlson.

### ACCIDENTS IN LAKE SUPERIOR IRON ORE MINES

The rising accident trend in the Lake Superior District iron ore mines is reviewed in a publication just released by the Bureau of Mines.

Although the safety record of the district, where 85 per cent of the country's iron ore is produced, was better for the eight year period 1940-1947 than in other metal mining districts, the frequency rate is climbing. Increased production and replacement of men entering the armed services in the 1940-1945 period by men with less experience, and the reentering of the mines by men released from war service during 1946 and 1947 had, and continues to have, "a definite effect on the number of injuries in the mines," according to the report.

Free copies of Information Circular 7510, "Accident Experience Iron-Ore Mines, Lake Superior District 1940-47," may be obtained by writing to the Bureau of Mines, Publications Distribution Section, 4800 Forbes Street, Pittsburgh 13, Pa.

## PUBLIC HEALTH SERVICE

### HOSPITALS FOR DRUG ADDICTS

The two Public Health Service hospitals for drug addicts and mentally ill patients at Lexington, Ky., and Fort Worth, Texas, were transferred July 1, 1949 from the National Institute of Mental Health to the Division of Hospitals, Bureau of Medical Services. The transfer was made as part of the reorganization within the Public Health Service. Dr. Kenneth W. Chapman, formerly clinical director of the Lexington hospital, has been appointed chief of the neuropsychiatric section of the Division of Hospitals, and will serve as liaison officer between the Hospital Division and the National Institute of Mental Health.

### PERSONALS

Dr. Charles F. Blankenship, acting state health officer of Nevada on loan from the Public Health Service since last fall, has been appointed Regional Medical Director of the Federal Security Agency Region 7, with headquarters in Kansas City, Mo., succeeding Dr. Joseph O. Dean, who has been transferred to headquarters in Washington, D. C., as associate chief of the Bureau of State Services.——Dr. Noka B. Hon has been appointed cancer control consultant to the Eastern and Southern States for the National Cancer Institute, replacing Dr. Robert L. Cherry, who has become Assistant Director of the Public Health Division of the ECA Mission to Greece.——Dr. Edward T. Blomquist has been appointed Assistant Chief of the Division of Tuberculosis, U. S. Public Health Service, to succeed Dr. Theodore F. Hilbish, who goes to Johns Hopkins Hospital for special training in radiology.

Surgeon Rheim Jones and Senior Assistant Surgeon Robert C. Rodger have been assigned to Johns Hopkins University for training in otolaryngology and diagnostic bacteriology, respectively; Senior Assistant Surgeon Lynn Fulkerson Jr. has been assigned to the University of Kansas School of Medicine for graduate training in anesthesiology.

# Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

## CALIFORNIA

**Courses for Practicing Physicians.**—Stanford University School of Medicine, San Francisco, will present courses for practicing physicians September 19-23. Registration in all courses is limited and closes September 1. Half-day courses include general surgery, internal medicine, dermatology, fractures, laboratory diagnosis, endocrinology and surgical specialties; full-day courses will be given in anesthesiology and clinical ophthalmology. The fee, $75, is not covered by veterans' educational benefits. Apply to Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15.

**University Appointments.**—Two new faculty members have been appointed to Stanford University School of Medicine effective September 1. Dr. Robert H. Alway has been named associate professor of pediatrics, the rank he now holds at the University of Utah College of Medicine, Salt Lake City, where he has been on the faculty since 1943. Dr. Lyman M. Stowe, currently on the staff of the Yale University School of Medicine, New Haven, Conn., has been appointed assistant professor of obstetrics and gynecology. He has been a senior fellow in obstetrics and gynecology at the University of Minnesota Hospitals in Minneapolis. From 1944 to 1946 he was a medical officer in the U. S. Navy.

## COLORADO

**Personal.**—Dr. Harry A. Sauberli, a graduate of Vanderbilt University School of Medicine, 1932, has been appointed state director of local health services for the Colorado State Division of Public Health.

**Southern Colorado Medical Society.**—The organizational meeting for this society was held June 18 in Pueblo. Officers elected are Drs. James Allan Shand, La Junta, president, and Eugene B. Ley, Pueblo, secretary-treasurer. Dr. Tate Miller, Dallas, was the principal speaker at the all day meeting. The society will replace the Arkansas Valley Medical Society, which became inactive during World War II.

## FLORIDA

**Diabetes Service Program.**—The statewide diabetes service program begun in Florida in July by the State Board of Health will follow a pattern of case finding and education established by the U. S. Public Health Service Diabetes Demonstration Unit in Jacksonville. The demonstration unit has proved so successful that the demands for such programs in other sections of the state have been great. There will be testing for diabetes, especially among relatives of diabetic persons, a monthly educational bulletin for diabetic persons and their relatives and classes for diabetic persons in county health departments. There will continue to be free insulin for diabetic persons who cannot afford to purchase the drug.

## ILLINOIS

**Abolish Two State Posts.**—The positions of state surgeon and state supervising dentist in the state public welfare department were discontinued August 1. Services will be transferred to other members of the department staff. Dr. Frederick Gruneck of Chicago has been state surgeon and Charles L. Daniels, D.D.S., of Aurora, has been supervising dentist since 1940.

### Chicago

**Chairman of Professional Faculty.**—Dr. Percival Bailey, professor of neurology and neurologic surgery, University of Illinois College of Medicine, has been reelected chairman designate of the Professorial Faculty of the University of Illinois' Chicago Professional Colleges. The principal purpose of the Professorial Faculty is to bring about closer cooperation between the staff of the Chicago and the Urbana campuses of the University of Illinois.

**The Tumpeer Scholarship.**—A gift of $10,000 has been made to the Chicago Medical School to establish the Dr. I. Harrison Tumpeer Subsidiary Scholarship. The late Dr. Tumpeer, a graduate of Rush Medical College, was professor and head of the pediatric department at the Post Graduate Medical School and Hospital. He was also adjunct pediatrician of the Michael Reese Hospital, organizer and director of the pediatric department of the hospital's dispensary and attending pediatrician. He organized 11 clinics and was credited for the rapid development of the medical library at Michael Reese before his death in November 1939. The scholarship is among the first received under a new subsidiary scholarship plan created by the Chicago Medical School to subsidize the education of a medical student for four years.

**Reopen Clinic for Alcoholism.**—Under the auspices of the Chicago Committee for Alcoholism, which was founded by a group of physicians and civic leaders headed by Anton J. Carlson, Ph.D., the Portal House outpatient clinic has been recently reopened at 100 East Chicago Avenue as a treatment and information center. Under the medical directorship of Dr. Edward C. Frank each patient receives a diagnostic study, which includes a medical, psychologic and psychiatric evaluation followed by individual and group therapy for alcoholism. The final objective of treatment is total rehabilitation. Information on alcoholism is now available at the clinic as well as a free course of orientation lectures and discussions. The clinic, supported in part by a U. S. Public Health Service grant, is accepting voluntary contributions.

## MARYLAND

**Industrial Vision Service.**—A new industrial vision protective service designed to promote the visual efficiency and safety of workers in Baltimore plants has been put in operation by the Maryland Society for the Prevention of Blindness in cooperation with local and industrial groups. Service includes an eyesight-screening examination of the workers. The service is designed primarily to be available at the request of plant managers who employ 200 workers or less. Findings of surveys will make it possible to learn of visual deficiencies and to initiate needed professional and protective care.

**District Health Building.**—Ground was broken in Baltimore June 2 for the Southern Health District building, the first district building erected expressly for the use of the city health department. It is located in a section containing many industrial plants. The two story building will serve as the administrative center for the district health officer, the nursing staff and other district personnel and will house clinics for well baby, prenatal, tuberculosis and venereal disease services. The plans also call for an auditorium which will serve as a meeting place for community groups concerned with health.

## MISSOURI

**Krueger Memorial Fund.**—The will of Dr. Owen W. Krueger, Kansas City, Mo., who died May 20, provided that $10,000 be given to the building fund of the Jackson County Medical Society and that $1,000 be given to the Library Fund to purchase books. The legacies were presented by Mrs. Krueger to Dr. Caryl R. Ferris, Kansas City, at the executive office of the society. The society's finance committee recommended that the amount for the building fund be invested in U. S. Government Bonds and should be continued as the Owen W. Krueger Memorial Fund until the society shall use the funds to purchase a building.

## NEW MEXICO

**Appoints Executive Secretary.**—The New Mexico Medical Society has appointed Mr. Ralph R. Marshall as its first full time executive secretary. The new executive office will be located at 4852 Southern Avenue, Albuquerque.

**Society News.**—A meeting of the New Mexico Clinical Society was held at the Veterans Administration Hospital in Albuquerque July 18. Dr. Merl J. Carson, St. Louis, spoke on the "Use of Angiocardiography in the Study of Congenital and Acquired Heart Disease." This was a joint meeting with the professional staff of St. Joseph's Sanatorium and Hospital in Albuquerque.

## PENNSYLVANIA

**Summer Seminar at Hershey.**—The Pennsylvania Academy of General Practice will hold its summer seminar at the Hershey Hotel, Hershey, August 20. Dr. Elliot P. Joslin, emeritus professor of clinical medicine, Harvard Medical School, Boston, will speak on "The Treatment of Diabetes Mellitus," and Dr. Robert B. Greenblatt, professor of endocrinology, University of Georgia, Augusta, will speak on "Functional Uterine Bleeding." There is no registration fee, and the meeting is open to all physicians who are members of the American Medical Association.

**Meeting of Pathologists and Cancer Society.**—A meeting of the Pennsylvania Association of Clinical Pathologists, the Middle Eastern District of the College of American Pathologists, the Clinical Pathological Society of Pittsburgh and the Allegheny County Division of the American Cancer Society will be held in Pittsburgh September 23 at the Roosevelt Hotel. The program includes a slide seminar on "Cytologic Diagnosis of Cancer of the Lung," with Dr. Peter A. Herbut, Philadelphia, as moderator. The registration fee is $3. There will be available 75 sets of slides, which will be mailed to registrants two weeks before the meeting. The registration fee of $3 for the slide seminar should be sent to Dr. Elwyn L. Heller, Secretary, Department of Pathology, University of Pittsburgh, Pittsburgh.

### Pittsburgh

**Second Symposium on Orthopedic Appliances.**—The Mellon Institute of Industrial Research will again join with the University of Pittsburgh School of Medicine in holding a Second Annual Symposium on Orthopedic Appliances at the institute during the week of September 19. The second symposium, also sponsored by the Sarah Mellon Scaife Foundation through its Multiple Fellowship on Orthopedic Appliances in the institute, will be open to invited orthopedic physicians and surgeons as well as to selected orthopedic technologists skilled in brace design, fitting and construction. The symposium's lecture staff will include nationally recognized authorities in orthopedics as well as scientists of Mellon Institute. They will give detailed attention to bracing problems in cerebral palsy, paraplegia and hemiplegia resulting from poliomyelitis and other disabling diseases, to scoliosis and related spinal conditions and to other specialized orthopedic problems. Inquiries concerning attendance and program details should be addressed to the Orthopedic Appliance Fellowship, Mellon Institute, 4400 Fifth Avenue, Pittsburgh 13, Pa.

## WEST VIRGINIA

**Heart Association Meeting.**—Dr. Paul D. White, Boston, will be the guest speaker at an open meeting of the West Virginia Heart Association September 29 in the Charleston High School auditorium. A clinic will be held September 30 at the Daniel Boone Hotel and will be followed by a business meeting and dinner for physicians and nonphysician members of the association.

**Appoint Medical Director of Compensation Fund.**—Dr. James L. Vickers of Greenwich, Conn., has been appointed by Compensation Commissioner Curtis B. Trent Jr. as medical director of the Workmen's Compensation Fund, succeeding Dr. William T. Henshaw, who died April 13. Dr. Vickers, a native of Huntington, has been engaged in the practice of surgery at Greenwich for several years. Previously he had been identified with the medical department of the New York and Wisconsin workmen's compensation funds. He is a graduate of Johns Hopkins University School of Medicine, 1924.

## WISCONSIN

**Dr. Bradley Made Emeritus Professor.**—Harold Bradley, Ph.D., was made emeritus professor of physiologic chemistry of the University of Wisconsin July 16. Dr. Bradley received a bachelor's degree at the University of California and a Ph.D. at Yale. He came to Wisconsin in 1906. In addition to many years of service to the university, he and his wife have given to the university, in memory of their daughter, Mary Cornelia, the Bradley Memorial Hospital.

**Coordinator of Postgraduate Medical Education.**—Dr. Robert C. Parkin, Chicago, has been appointed assistant professor of clinical medicine and coordinator of postgraduate medical education at the University of Wisconsin Medical School, Madison. He will direct and develop the postgraduate program of training started by the late Dr. Llewellyn R. Cole. Dr. Parkin received his M.D. degree from the university in 1943 and served in the recent war; after his discharge from the Army he practiced for two years in New Albin, Ia., before joining the staff of the Council on Medical Education and Hospitals of the American Medical Association.

## HAWAII

**Society of Neurology and Psychiatry.**—Twenty-three physicians met recently in Honolulu to organize the Society of Neurology and Psychiatry of Hawaii. A constitution was formally adopted on April 13, 1949. Officers are Dr. Richard E. Kepner, Honolulu, president; Dr. Thomas S. Bennett, Honolulu, vice president, and Dr. H. Joseph Simon, Honolulu, secretary-treasurer. Meetings are held on the second Wednesday of alternate months.

## GENERAL

**Pan-American Doctors Club Meeting.**—This group will hold a symposium on tuberculosis August 14-15 in San Miguel Regla, Huasca, Hidalgo, Mexico. Dr. Henry J. Zettelman, 636 Church Street, Evanston, Ill., is program chairman.

**Send Respirators to Eleven States.**—With reported cases of poliomyelitis running over 1,000 more for this year than for the corresponding period last year, the National Foundation for Infantile Paralysis by July 23 had sent 60 items of medical equipment, including 30 respirators to 17 states, principally to Arkansas and Indiana, recruited 70 nurses and 9 physical therapists for epidemic duty in 12 states and provided financial aid totaling $112,298 to 29 counties in 16 states.

**Prevalence of Poliomyelitis.**—Reports of cases of poliomyelitis for the periods indicated have been received from the Division of Public Health Methods, U. S. Public Health Service:

| | Week Ended | | | Total to | | Total * | |
|---|---|---|---|---|---|---|---|
| | July 23, 1949 | July 24, 1948 | Median Expec. | July 23, 1949 | July 24, 1948 | March 19-July 23, 1949 | March 20-July 24, 1948 |
| New England States: | | | | | | | |
| Maine | 14 | .. | .. | 48 | 1 | 48 | 1 |
| New Hampshire | 5 | 3 | 3 | 8 | 3 | 8 | 3 |
| Vermont | 3 | .. | .. | 6 | 3 | 4 | 2 |
| Massachusetts | 31 | 2 | 2 | 100 | 11 | 100 | 8 |
| Rhode Island | 5 | .. | .. | 7 | .. | 7 | .. |
| Connecticut | 9 | 3 | 3 | 35 | 8 | 32 | 7 |
| Middle Atlantic States: | | | | | | | |
| New York | 116 | 33 | 33 | 272 | 139 | 252 | 103 |
| New Jersey | 21 | 23 | 8 | 106 | 82 | 70 | 75 |
| Pennsylvania | 6 | 15 | 12 | 48 | 65 | 38 | 54 |
| East North Central States: | | | | | | | |
| Ohio | 33 | 48 | 13 | 91 | 133 | 85 | 124 |
| Indiana | 84 | 11 | 5 | 191 | 63 | 181 | 53 |
| Illinois | 75 | 22 | 13 | 204 | 81 | 188 | 74 |
| Michigan | 82 | 12 | 7 | 183 | 39 | 156 | 33 |
| Wisconsin | 29 | 11 | 2 | 72 | 28 | 58 | 28 |
| West North Central States: | | | | | | | |
| Minnesota | 79 | 22 | 5 | 265 | 53 | 226 | 45 |
| Iowa | 45 | 23 | 8 | 125 | 117 | 112 | 104 |
| Missouri | 73 | 9 | 4 | 171 | 29 | 160 | 29 |
| North Dakota | 17 | 2 | 2 | 63 | 6 | 59 | 6 |
| South Dakota | 6 | 4 | .. | 54 | 34 | 32 | 34 |
| Nebraska | 25 | 23 | 3 | 74 | 94 | 61 | 89 |
| Kansas | 45 | 9 | 8 | 137 | 44 | 111 | 41 |
| South Atlantic States: | | | | | | | |
| Delaware | .. | 17 | .. | 10 | 40 | 8 | 39 |
| Maryland | 4 | .. | 3 | 20 | 3 | 11 | 2 |
| District of Columbia | 7 | 4 | 4 | 12 | 10 | 11 | 10 |
| Virginia | 17 | 18 | 18 | 42 | 71 | 32 | 69 |
| West Virginia | 21 | 2 | 2 | 68 | 12 | 61 | 7 |
| North Carolina | 17 | 204 | 3 | 85 | 888 | 58 | 864 |
| South Carolina | 3 | 35 | 4 | 32 | 74 | 19 | 66 |
| Georgia | 14 | 9 | 5 | 58 | 56 | 50 | 55 |
| Florida | 3 | 16 | 5 | 85 | 93 | 63 | 76 |
| East South Central States: | | | | | | | |
| Kentucky | 41 | 13 | 7 | 103 | 44 | 95 | 41 |
| Tennessee | 40 | 8 | 6 | 121 | 50 | 115 | 43 |
| Alabama | 14 | 14 | 7 | 97 | 55 | 84 | 43 |
| Mississippi | 25 | 11 | 5 | 120 | 39 | 109 | 37 |
| West South Central States: | | | | | | | |
| Arkansas | 93 | 13 | 3 | 421 | 42 | 410 | 40 |
| Louisiana | 13 | 1 | 4 | 90 | 42 | 78 | 36 |
| Oklahoma | 80 | 27 | 6 | 425 | 86 | 418 | 80 |
| Texas | 89 | 68 | 61 | 1,108 | 878 | 1,017 | 857 |
| Mountain States: | | | | | | | |
| Montana | 2 | 6 | 1 | 10 | 21 | 9 | 11 |
| Idaho | 16 | 4 | 1 | 96 | 56 | 83 | 29 |
| Wyoming | 7 | 7 | .. | 14 | 14 | 14 | 14 |
| Colorado | 16 | 6 | 2 | 56 | 19 | 54 | 17 |
| New Mexico | 13 | 6 | .. | 44 | 18 | 43 | 16 |
| Arizona | 4 | 5 | .. | 30 | 27 | 19 | 26 |
| Utah | .. | 3 | .. | 55 | 15 | 39 | 12 |
| Nevada | 1 | .. | .. | 6 | 1 | 6 | .. |
| Pacific States: | | | | | | | |
| Washington | 12 | 8 | 2 | 103 | 57 | 58 | 39 |
| Oregon | 4 | 7 | 4 | 60 | 33 | 44 | 17 |
| California | 80 | 192 | 25 | 708 | 803 | 419 | 771 |
| Total | 1,444 | 979 | ... | 6,339 | 4,580 | 5,415 | 4,230 |
| Median, 1944-1948 | ... | ... | 568 | 2,320 | | 2,057 | |

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* Last two columns show reported incidence since approximate average seasonal low: 18 weeks.

**Courses in Laboratory Diagnosis.**—The U. S. Public Health Service will give the following refresher courses in laboratory diagnosis September 12 to December 16:

Laboratory Diagnosis of Parasitic Diseases (6 weeks) September 12 to October 21.
Laboratory Diagnosis of Bacterial Diseases, Part 2, and General Bacteriology (5 weeks) October 31 to December 2.
Laboratory Diagnosis of Rabies (1 week) November 14 to November 18.
Advanced Enteric Bacteriology (2 weeks) December 5 to December 16.

Information and applications should be requested from the Chief, Laboratory Division, Communicable Disease Center, 291 Peachtree Street N.E., Atlanta, Ga.

**Mississippi Valley and Medical Writers' Meetings.**—The Mississippi Valley Medical Society will hold its annual meeting at the Jefferson Hotel, St. Louis, September 28-30, under the presidency of Dr. Alphonse McMahon, St. Louis. Over 30 clinical teachers from leading medical schools will conduct the postgraduate assembly, which is planned to appeal to general practitioners. There is no registration fee, and all ethical physicians are invited to attend. The American Medical Writers' Association will hold its annual meeting September 28. In the afternoon a two hour course of instruction in medical writing will be conducted by Dr. J. F. Hammond, associate editor, Journal of the American Medical Association, Chicago. Other speakers include Dr. Howard A. Rusk, New York, and Foster Eaton of the St. Louis Star-Times. Information on these meetings may be obtained from Dr. Harold Swanberg, Secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Ill.

**Fellowships in Cancer Research.**—The Committee on Growth of the National Research Council, acting for the American Cancer Society, is entertaining applications for grants and fellowships. Applications for new grants in cancer research will be received until October 1. Investigators now receiving grants will be notified individually regarding application for the extension of these grants. Final decision on applications will be made in most cases soon after February 1. Grants approved at this time ordinarily will become effective July 1, 1950. Fellowship applications may be submitted at any time. Those received prior to October 1 will be acted on in December by the Committee on Growth. Those received between October 1 and March 1 will be acted on in April. Fellowships ordinarily will begin July 1, though this date may be varied at the request of the application. During the past year the American Cancer Society, Inc., on recommendation of the Committee on Growth, has approved research grants and fellowships totaling over $2,000,000. Communications regarding grants and fellowships should be addressed to Executive Secretary, Committee on Growth, National Research Council, 2101 Constitution Avenue N.W., Washington 25, D. C.

**Distribution of Cyclotron-Produced Radioisotopes.**—Cyclotron-produced radioisotopes will be made available to research men in the United States under a program announced July 23 by the Atomic Energy Commission. They will be used to apply to problems in general science, medicine, industry and agriculture. The program will augment the present distribution of reactor-produced radioisotopes, which has been in effect since August 1946. Six thousand, nine hundred and seventy-five shipments of radioisotopes of nearly 60 elements representing nearly 100 isotopic species have been made for research purposes through the facilities of the Atomic Energy Commission. Only those cyclotron-produced isotopes having half-lives of more than 30 days will be distributed initially. Included in these are 43 day beryllium 7, 3 year sodium 22, 44 day iron 59, 4 year iron 55, 250 day zinc 65, 90 day arsenic 63, and 56 day iodine 125. Other cyclotron-produced radioisotopes of significant value as tools of research may be added at a later date.

The Isotopes Division, Atomic Energy Commission, Oak Ridge, Tenn., will carry out the allocation function in the same manner as it now does with reactor-produced isotopes.

Cyclotron-produced radioisotopes, because of the method of their manufacture, are more expensive than reactor-produced isotopes, and, in order to price them at a level which will make them available to most research institutions, it will be necessary for the commission to subsidize the program to a certain extent. In addition, these isotopes will be made available free of all production charges for cancer research. Distribution of materials produced under this program will be limited to institutions and organizations within the United States and its territories and possessions.

**Million Dollar Libel Suits Announced.**—Dr. Anton J. Carlson, Chicago, president of the National Society for Medical Research, announced July 24 that two one million dollar libel suits have been filed by medical scientists against the Hearst Publishing Company, Inc., publisher of the Chicago *Herald American*, and William Randolph Hearst of San Simeon, Calif. One million dollars for punitive and compensatory damages is being asked by Nathan R. Brewer, D.V.M., Ph.D., of the University of Chicago in a libel suit filed in the U. S. District Court. Dr. Virgil H. Moon of Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C., filed suit for a million dollars the previous week as the result of a news story printed in the Chicago *Herald American* which "maliciously misrepresented his views on animal experimentation" May 24 and May 29 of this year. Both suits were filed against the Chicago newspaper within ten days as the result of that paper's campaign against a bill before the Illinois General Assembly to provide that condemned animals from the pounds in the state be made available to medical institutions.

"Two other suits are pending, and others will follow if necessary," Dr. Carlson said. "This is the beginning of a policy which took shape when a nationwide legal committee was formed by the National Society for Medical Research to advance medical research and to protect the medical worker and his institution against what appears to be an organized program to villify and slander medical science and scientists." The newly formed Legal Committee for Medical Research includes the attorneys and counsel of leading colleges, universities and medical institutions throughout the country, and representatives are located in every state.

**Congress of Physical Medicine.**—The annual session and instruction seminar of the American Congress of Physical Medicine will be held at the Netherland Plaza, Cincinnati, September 6-10. Numerous round table discussions will be presented. Those speaking by invitation include:

Bruce C. Martin, Columbus, Ohio, Use of Skin Grafts in Rehabilitation.
Harry D. Bouman, Madison, Wis., Treatment of Hyperhidrosis by Electric Current.
Francis X. Sweeny, Philadelphia, and Steven M. Horvath, Ph.D., Philadelphia, Infra-Red Heating of Tissues.
Laurence E. Morehouse, Ph.D., Los Angeles, Physiology of Exercise.
Alexander Sandow, Ph.D., New York, Latent Period of Muscular Contraction.
Fay A. LeFevre, Cleveland, Physical Medicine and Peripheral Vascular Disease.
Louis Daily Jr., Khalil G. Wakim, Julia F. Herrick, Edith M. Parkhill and William L. Benedict, Rochester, Minn., Effects of Microwave Diathermy on the Eye: An Experimental Study.
Earl D. McBride, Oklahoma City, Disability Evaluation.
Edward B. Schlesinger, New York, Rationale and Use of Muscle Relaxants in Neuromuscular Disorders.
Glenn Gullickson, Minneapolis, Study of the Effect of Unilateral Paralysis of the Lower Extremity on Bone Growth.
George H. Bishop, Ph.D., and Margaret Clare, R. P. T., St. Louis, Analysis of Periodic Muscle Activity in Experimental Animals.
Ludwig W. Eichna, Adolph R. Berger and Bertha Rader, New York, Measurement of Intracardiac and Intravascular Temperatures and Their Comparison with Rectal Temperature.
Robert L. Bowman, New York, Some Factors Influencing the Effect of Liquid-Borne Ultrasound on Biological Systems.

A Symposium of Hydrotherapy will be conducted Friday morning and a Symposium on Poliomyelitis in the afternoon. The annual dinner will be Thursday at 7 p.m.

## Marriages

WILLIAM LESLIE MACVANE JR., Togue, Maine, to Miss Margaret Elizabeth Owen of Hallowell, June 4.

SAMUEL WARD CASSCELLS, Wilmington, Del., to Miss Sarah O. Dyson in Charlottesville, Va., June 11.

ROBERT FLEMING HAGERTY, Durham, N. C., to Miss Mary Louise Leffelman of Stateburg, S. C., June 4.

WILLIAM BRADFORD DE MOND, Greenfield, Mass., to Miss Margaret Virginia Weber of Denver, June 9.

WALLACE E. MILLER, Indianapolis, to Miss Beverly Dahn Welsh in Crawfordsville, Ind., May 29.

CHESTER AMOS HAUG, Rochester, N. Y., to Miss Mary Elizabeth Penn of Massena, May 14.

WALTER BURT GRENELL, Chicago, to Miss Marion L. Baskette of Pontiac, Mich., May 28.

FRANCIS J. GILROY, Edgewater, N. J., to Miss Mary M. Shay of Tompkinsville, N. Y., June 11.

STEWART MCCRACKEN, Philadelphia, to Miss Joan Adamson Fernley at Whitemarsh, June 11.

VICTOR A. MCKUSICK, Baltimore, to Miss Anne Bishop in Rochester, N. Y., June 11.

HANS LEHFELDT to Miss Maria Eisner, both of New York, May 15.

# Deaths

**Elias William Abramowitz** ⊕ New York; born in 1885; University and Bellevue Hospital Medical College, New York, 1907; clinical professor of dermatology and syphilology at the New York Post-Graduate Medical School and Hospital, New York University–Bellevue Medical Center; formerly on the faculty of Columbia University College of Physicians and Surgeons; founding member of the American Board of Dermatology and Syphilology; member of the American Academy of Dermatology and Syphilology and the American Dermatological Association; founder, past president and honorary member of the Brooklyn Dermatological Society; member and formerly chairman of the Manhattan Dermatological Society; member and formerly vice president of the Society for Investigative Dermatology; fellow and advisory board member of the New York Academy of Medicine; formerly corresponding member of the French Society of Dermatology and the German Dermatological Society; chief dermatologist of the Israel-Zion Division of Maimonides Hospital in Brooklyn; attending dermatologist to the New York Post-Graduate Hospital; attending dermatologist and syphilologist at the New York Skin and Cancer Hospital; director of dermatology and syphilology at the Gouverneur Hospital and the Jewish Memorial Hospital; during World War I a member of the Council of National Defense and an instructor in an intensive course in dermatology at Columbia under Army and Navy auspices; on the advisory board, Selective Service, during World War II; died June 13, aged 63, of hypernephroma with metastases.

**Walton Martin** ⊕ New York; born in Staten Island, N. Y., Feb. 4, 1869; College of Physicians and Surgeons, medical department of Columbia College, New York, 1892; clinical professor emeritus of surgery at his alma mater; member of the founders group of the American Board of Surgery; member of the American Surgical Association; fellow of the American College of Surgeons; on the staff as consulting surgeon and member of the board of managers of St. Luke's Hospital; co-author of "Chemistry and Physics"; revised T. H. Green's "Introduction to Pathology and Morbid Anatomy" in 1898; one of the translators and editors of Dr. E. Von Bergmann's "System of Practical Surgery"; died at his summer home in Cornwall, Conn., June 18, aged 80, of cerebral hemorrhage.

**Frank Harrell Redwood** ⊕ Norfolk, Va.; Medical College of Virginia, Richmond, 1913; specialist certified by the American Board of Psychiatry and Neurology, Inc.; fellow of the American College of Physicians; past president of the Norfolk County Medical Society; member of the Southern Psychiatric Association, American Psychiatric Association and the Association for Research in Nervous and Mental Diseases; formerly vice president of the Seaboard Medical Association; served during World War I; affiliated with Norfolk General Hospital, St. Vincent's Hospital and De Paul Hospital; at one time associated with the U. S. Public Health Service; died in New York May 27, aged 58.

**James Arthur Attridge** ⊕ Port Huron, Mich.; Detroit College of Medicine, 1897; past president of St. Clair County Medical Society; fellow of the American College of Surgeons; died May 22, aged 78, of cerebral hemorrhage.

**Lyle Cholwell Bacon** ⊕ St. Paul; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1890; an Associate Fellow of the American Medical Association; died June 4, aged 83, of cerebral hemorrhage.

**Theodore Prudden Bailey**, Albany, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1880; member of the American Medical Association; affiliated with St. Peter's Hospital, where he died May 22, aged 91, of bronchopneumonia and uremia secondary to benign prostatic obstruction.

**Walter Hays Baker** ⊕ South Bend, Ind.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1907; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; affiliated with Memorial and St. Joseph's hospitals; died June 6, aged 72, of cerebral aneurysm.

**John Houston Barnett**, Marlin, Texas; Vanderbilt University School of Medicine, Nashville, 1909; member of the American Medical Association; past president of Falls County Medical Society; affiliated with Buie-Allen Hospital, where he died May 27, aged 64, of asthma.

**Robert Lander Bartlett** ⊕ Warm Springs, Va.; Tufts College Medical School, Boston, 1897; member of the Medical Society of the State of New York; for many years superintendent of the Oneida County Hospital in Rome, N. Y.; died May 25, aged 74.

**Joseph Franklin Blake**, Chadbourn, N. C.; North Carolina Medical College, Davidson, 1905; died May 27, aged 65, of heart disease.

**Frank William Boadway**, Ardmore, Okla.; Kentucky School of Medicine, Louisville, 1907; member of the American Medical Association; served as vice president of the Oklahoma State Medical Association; died April 17, aged 66, of heart disease.

**David C. Bosserman**, McAllen, Texas; National University of Arts and Sciences Medical Department, St. Louis, 1914; member of the American Medical Association and Missouri State Medical Association; served overseas during World War I; formerly affiliated with Christian Hospital in St. Louis; died in the U. S. Naval Hospital, Corpus Christi, May 23, aged 69, of pulmonary infarction.

**Arthur Harry Bradley**, St. Louis; Marion-Sims College of Medicine, St. Louis, 1892; member of the American Medical Association; died in the Barnes Hospital May 7, aged 79, of carcinoma of the cecum.

**Reed Oshea Brigham** ⊕ Toledo, Ohio; University of Michigan Medical School, Ann Arbor, 1921; died May 23, aged 60.

**Clarence Albert Butler**, Hot Springs, S. D.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1899; member of the American Medical Association; died in the Veterans Administration Hospital May 7, aged 84, of uremia.

**Frederick A. Carpenter** ⊕ Waverly, N. Y.; Eclectic Medical Institute, Cincinnati, 1889; past president of the Tioga County Medical Association; for many years school doctor; affiliated with the Tioga County General Hospital, where he died May 31, aged 93, as the result of a fall.

**Charles Albert Clement**, Rover, Ark. (licensed in Arkansas in 1903); died May 19, aged 74, of carcinoma of the lung.

**James Francis Condrick**, Quincy, Mass.; Tufts College Medical School, Boston, 1919; member of the American Medical Association; died May 27, aged 63.

**Clyde Sumner Culp**, Salineville, Ohio; Western Reserve University Medical Department, Cleveland, 1898; member of the American Medical Association; on the staff of City Hospital in East Liverpool, where he died May 28, aged 75.

**Arthur Hamilton Deekens**, New Orleans; University of Pennsylvania Department of Medicine, Philadelphia, 1889; member of the American Medical Association and the Medical Society of Virginia; served during World War I; died in Richmond, Va., May 29, aged 91, of carcinoma.

**William Joseph Doyle II** ⊕ Wilkes-Barre, Pa.; Jefferson Medical College of Philadelphia, 1932; during World War II served as medical examiner of Wilkes-Barre draft board number 1, and was awarded a Certificate of Merit by the Selective Service System for faithful and loyal service; affiliated with the Mercy Hospital, where he died May 23, aged 41, of intestinal obstruction.

**James Erle Drake** ⊕ Spokane, Wash.; Washington University School of Medicine, St. Louis, 1901; for many years school physician; died April 21, aged 72, of heart disease and hypertension.

**Isaiah Davis Durham**, West Columbia, S. C.; University of Georgia Medical Department, Augusta, 1913; member of the American Medical Association; died May 30, aged 60.

**Sidney Allan Ellis**, Boston (licensed in Massachusetts in 1899); died in May.

**Robert H. Fisher**, Waverly, N. Y.; University of Buffalo School of Medicine, 1895; died in the Robert Packer Hospital, Sayre, Pa., May 26, aged 76.

**Charles Joseph Folz** ⊕ Evansville, Ind.; Indiana University School of Medicine, Indianapolis, 1923; county coroner; served during World War I; died June 16, aged 53.

**Harold Hemmingway Foreman** ⊕ Akron, Ohio; Howard University College of Medicine, Washington, D. C., 1933; died June 21, aged 41.

**Edwin Rolander Fouts**, Ryegate, Mont.; Beaumont Hospital Medical College, St. Louis, 1892; member of the American Medical Association; died in Billings June 2, aged 79, of cerebral hemorrhage.

**William L. Gambill** ⊕ Ashland, Ky.; Hospital College of Medicine, Louisville, 1901; fellow of the American College of Surgeons; affiliated with King's Daughters' Hospital; died June 14, aged 70, of hepatitis.

**Walter Wesley Goddard** ⊕ Miami, Fla.; Albany (N. Y.) Medical College, 1894; an Associate Fellow of the American Medical Association; member of the Medical Society of the State of New York; at one time practiced in Schenectady, N. Y., where he was affiliated with the Eastern New York Orthopedic Hospital-School "SunnyView"; died in the Jackson Memorial Hospital April 26, aged 76, of cerebral embolus, arteriosclerosis and bronchiectasis.

**John Hansen** ⊕ Glenbeulah, Wis.; Milwaukee Medical College, 1904; died June 1, aged 76.

**Harry Haver Hatcher,** Stamford, Conn.; Starling Medical College, Columbus, 1896; fellow of the American College of Surgeons; at one time practiced in Dayton, Ohio, where he was for many years county coroner, and on the staffs of Dayton State Hospital and St. Elizabeth Hospital; died May 25, aged 74.

**Chessman Palmer Hutchinson,** Danielson, Conn.; Baltimore Medical College, 1893; member of the American Medical Association and the Massachusetts Medical Society; died April 13, aged 88.

**George Samuel Isaacs,** Donora, Pa.; University of Pittsburgh School of Medicine, 1948; served during World War II; intern at St. Francis Hospital in Pittsburgh, where he died May 14, aged 26, of acute leukemia.

**John Frank Jonas,** Marion, N. C.; Baltimore Medical College, 1903; member of the American Medical Association; past president of the McDowell County Medical Society and the Tenth District Medical Society; for many years county coroner; died May 28, aged 76.

**Edward Howard Jones,** Weyauwega, Wis.; Rush Medical College, Chicago, 1883; served as a member and president of the school board; for many years affiliated with Waupaca County Hospital; died recently, aged 89.

**Fred Willis Kettlestrings,** Oak Park, Ill.; Rush Medical College, Chicago, 1895; member of the American Medical Association; died in July, aged 81.

**Harold Arthur Kirkham** ⊕ Major, U. S. Army, retired, Detroit; Detroit College of Medicine and Surgery, 1913; served during World War I; entered the medical corps of the U. S Army on July 1, 1920; retired Nov. 30, 1933; died in Jennings Hospital May 16, aged 62.

**Arthur William McArthur,** Lincoln, Calif.; McGill University Faculty of Medicine, Montreal, Quebec, Canada, 1896; served during World War I; local health officer and school physician; on the staffs of the Mercy Hospital and Sutter Hospital, Sacramento, where he died April 28, aged 76, of coronary occlusion.

**Rufus Martin** ⊕ Warren, Ark.; University of Nashville (Tenn.) Medical Department, 1907; served during World War I; on the staff of Hunt Hospital; died April 15, aged 68, of carcinoma of the throat.

**Bernard I. Mills** ⊕ Maywood, Neb.; Lincoln Medical College of Cotner University, 1908; on the staff of St. Catherine of Sienna Hospital; died May 5, aged 64, of coronary occlusion.

**Marion Bailey Murdock** ⊕ Eastland, Texas; Medical College of Virginia, Richmond, 1943; served during World War II; killed in June, aged 31, in a plane crash.

**Austin Joseph O'Leary,** Tacoma, Wash.; Rush Medical College, Chicago, 1905; served during World War I; died May 19, aged 67, of coronary thrombosis.

**Louis Micheal Palermo,** Bronxville, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1928; member of the American Medical Association; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; assistant professor of surgery at the New York Medical College, Flower and Fifth Avenue Hospitals in New York, where he was on the staff of the Metropolitan Hospital; died May 8, aged 46.

**Irvin P. Philpot,** Branford, Fla.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1908; Atlantic Coast Line Railroad surgeon; died in the Alachua County Hospital, Gainesville, May 27, aged 72.

**Braxton Victor Powell,** Camden, Ark.; Memphis (Tenn.) Hospital Medical College, 1899; member of the American Medical Association; past president of the Quachita County Medical Society; served during World War I; affiliated with Camden Hospital; died May 11, aged 74.

**Hugh Lafayette Rains,** Okmulgee, Okla.; Memphis (Tenn.) Hospital Medical College, 1903; member of the American Medical Association; served during World War I; died in San Antonio, Texas, May 21, aged 69, of coronary occlusion.

**Simon James Russell,** Springfield, Mass.; Harvard Medical School, Boston, 1893; for many years affiliated with Mercy Hospital, where he died June 3, aged 81.

**Albert Lewis Schuyler,** Colchester, Conn.; Baltimore Medical College, 1895; died May 25, aged 77.

**John Sherburne II,** Kew Gardens, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1919; member of the American Medical Association; affiliated with Mary Immaculate Hospital in Jamaica, St. John's Hospital in Long Island City and the Doctors Hospital in New York; died in the Hospital of the Rockefeller Institute of Medical Research in New York, May 23, aged 57.

**Simon H. Slobins,** Fall River, Mass.; St. Louis College of Physicians and Surgeons, 1921; died May 12, aged 61, of coronary occlusion.

**Hudson Smythe** ⊕ Stockton, Calif.; University of California Medical School, San Francisco, 1901; served overseas during World War I; head of medical procurement and assignment committee for San Joaquin County during World War II; member of the Western section of the American Urological Association; affiliated with San Joaquin General Hospital, French Camp, and Dameron and St. Joseph's hospitals; died May 13, aged 72, of coronary thrombosis.

**Karl Avery Snyder,** Portage, Wis.; Northwestern University Medical School, Chicago, 1910; member of the American Medical Association; served during World War I; affiliated with St. Savior's General Hospital, where he died May 16, aged 61, of massive duodenal hemorrhage.

**James Selden Sturtevant** ⊕ Dixfield, Me.; Medical School of Maine, Portland, 1884; an Associate Fellow of the American Medical Association; formerly secretary of the local board of health; for many years treasurer of the Oxford County Medical Association; affiliated with the Rumford (Me.) Community Hospital, Central Maine General Hospital, Lewiston, and the Maine General Hospital, Portland; died May 22, aged 90.

**Alonzo Englebert Taylor,** Stanford, Calif.; University of Pennsylvania Department of Medicine, Philadelphia, 1894; at one time professor of pathology at the University of California in Berkeley; member of the Association of American Physicians; died in Palo Alto (Calif.) Hospital May 20, aged 78, of fractured vertebrae, general and cerebral arteriosclerosis and bronchopneumonia.

**George Wanee Teagarden,** Uniontown, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1907; died May 23, aged 70, of acute coronary occlusion.

**Alpheus LeRoy Thurston,** Indianapolis; Indiana University School of Medicine, Indianapolis, 1910; member of the American Medical Association; died April 21, aged 65, of cerebral hemorrhage.

**Russell R. Tomlin** ⊕ Senior Surgeon, U. S. Public Health Service, retired, New Orleans; University of Illinois College of Medicine, Chicago, 1916; entered the public health service in March 1920 and retired April 1, 1940; died April 29, aged 57, of coronary disease.

**Charles Joseph Wells,** Baltimore; Maryland Medical College, Baltimore, 1906; formerly vice president of the city council; died April 30, aged 67, of cerebral hemorrhage and arteriosclerosis.

**Lionelle Dudley Wells** ⊕ Holy Hill, S. C.; Medical College of State of South Carolina, Charleston, 1910; died in Roper Hospital, Charleston, May 18, aged 64.

**Edward Marsh Williams** ⊕ Oskaloosa, Iowa; St. Louis University School of Medicine, 1910; fellow of the American College of Physicians; past president of the Iowa Public Health Association; died May 17, aged 78, of congestive heart disease.

**George Clegg Williams** ⊕ Pearisburg, Va.; University of Virginia Department of Medicine, Charlottesville, 1935; died May 29, aged 40, of injuries received in an automobile accident.

**George N. Yagle** ⊕ Red Lion, Pa.; College of Physicians and Surgeons, Baltimore, 1895; an Associate Fellow of the American Medical Association; died April 23, aged 81, of arteriosclerosis.

# Foreign Letters

## AUSTRALIA

*(From Our Regular Correspondent)*

July 1, 1949.

### "Free" Medicine Costs 64 per Cent More

The high cost of administration of the "free" medicine scheme has been revealed by figures recently released. The Australian government paid for 247,475 medical prescriptions for the twelve months ending May 31, 1949. For the eleven months to April 31, the government had paid the drug stores $156,025. But in salaries and general expenses, $97,907 had been absorbed to administer this payment. This meant that the cost of each medical prescription had been increased by 64 per cent. The average cost for the drugs and dispensing of each prescription was 65 cents; the administrative cost was 43 cents, making a total of $1.08 per prescription.

It is estimated that only 45 doctors in private practice, of the 5,500 in Australia, are using the government forms. Doctors employed by the commonwealth government would, of course, be obliged to use the forms. Of the private doctors who are prescribing free medicine, the highest number is in Victoria and the lowest in Queensland. One prescription for 10 ampules of penicillin in oil holds the record for high cost; the government paid $207.

An unexpected complication in the scheme is a serious shortage of medicine bottles due to the coal strike now crippling Australian industry. Drug stores are unable to meet the present demand for fluid containers and would be unable to meet the expected increase in demand under universally "free" conditions.

### Regulations Changed

Under the old regulations, doctors were limited to prescribing specified sizes in mixtures and definite quantities of tablets. These restrictions have been removed by recent regulations, and a doctor may now prescribe the size or quantity which he considers best meets the need of the patient.

The British Medical Association spokesman has said that the fight against free medicine would not be affected by these changes. This concession was regarded as of minor nature and did not affect the doctors' demands for unlimited prescription and freedom from penalties.

No date has yet been fixed for the operation of the regulations compelling doctors to use the government forms for all prescriptions and making them liable to a fine of $160 if they use their personal forms for any prescriptions or any drug in a prescription in the government formulary. In the meantime the government has stated that it will recognize the right of any patient to refuse to accept a prescription on a government form. In that case, of course, the patient would be obliged to meet the cost of the prescription himself.

The government has expressed its confidence in its ability to meet any legal challenge of the validity of the Pharmaceutical Benefits Act that might be instituted by the B. M. A. in the high court of Australia and possibly referred to the privy council in Britain and is at present taking place in reference to the government's banking control legislation.

The government has further announced that regulations are at present being drafted for the general medical benefits scheme whereby half the cost of all private medical services will be paid by the government from its social security funds.

### Low Infant Mortality Rate

Australia's infant mortality rate for 1948 was the lowest ever recorded for any year. The rate per 1,000 live births was 27.77.

It is not clear whether the Australian aboriginal rate is included in these figures. Because of the difficulty of collecting statistics from a nomadic people and the small percentage of surviving aboriginals, the total figure given would not be significantly affected.

New Zealand does not include the Maori population in the published infant mortality figures for that country.

This 1949 rate for Australia is tangible evidence of a slow but steady development of infant welfare services in all states of Australia over the past twenty years. Almost the only limiting factor today, in the development of these services, is the shortage of trained nursing personnel. Australian cities and suburbs are dotted with infant welfare centers to which the mother of the well baby may come for routine weighing and advice. There is a well developed follow-up system which keeps in touch with every newborn baby. In the sparsely populated areas, the railway traveling clinic, the highway mobile service and even the "flying nurse" take care of the Australian infant.

The net increase of births over deaths in Australia is now 100,000 per year. Of 177,963 infants born in 1948, 4,942 died in their first year. As a result of natural increase as well as immigration, the Australian population in the 18 months ending June 30, 1950, would increase by 400,000, compared with 900,000 in the 14 years 1933-1947.

The official population target for Australia is 20,000,000, compared with a present population of 7,500,000. This target is considered to be the minimum necessary for Australia's security and the maximum compatible with the natural resources of the country.

## BELGIUM

*(From Our Regular Correspondent)*

July 8, 1949.

### Control of State Medicine

Although in Belgium the socialization of medicine has not reached the degree it has attained in Great Britain, one observes, nevertheless, that the application of the measures of sick and invalidity insurance is abused to such an extent that one can already foresee the ruin of this institution. Without doubt, its aim, to assure equitable medical care to all those in need of it, is laudable; unfortunately, as in all human affairs, everything that is based on infringement of the liberty of the individual is bound to lead to failure.

Already there are heard in Belgium rumors that parliament is considering measures regarding the abuse and frauds committed with regard to sick and invalidity insurance. It has become necessary to take drastic measures to avoid immediate ruin.

These measures are complex, and certain details are unusual and abnormal. It can be foreseen that this structure is decaying as a result of its illogical nature. For example, "The benefit of compensation is denied to the insured who has used a means of transportation other than a common carrier, without authorization of the medical counselor of the insurance organization; the insured who will do, without authorization of the medical counselor of the insurance organization, nonremunerative work, even for himself. Nevertheless, he can do light work if these have not been forbidden by the medical counselor of the insurance organization; the insured who without authorization of the medical counselor will change his residence to go to the seaside, the country or a foreign locality; the insured who will be found in a show or theatre or where drinks are dispensed without authorization of the medical counselor of the insurance organization and outside the hours authorized for leaving the house; the insured who will be found without authorization of the insurance organization outside his domicile or residence in the following hours: 11:30 a. m. to 2 p. m. and 5 p. m. to 8 a. m., during the period extending from October 1 to March 31, 7:30 p. m. to 8 a. m., during the period extending from April 1 to September 30, or who will be found in a drinking establishment during the hours authorized for leaving his domicile; the insured who will be found without authorization of his medical counselor in a show or theater during the hours authorized for going out; the insured who will be found away from his residence more than 15 kilometers, except on authorization of his insurance organization and a definite cause."

A reporter commented on this example: "It is just to recognize that, in making these rules, the authorities respond to their duty to the public to combat dishonesty and exploitation of unfortunate situations. To condemn the insured who does this is well and good, but is one not exaggerating when, for going out in a private vehicle of transportation (a bicycle perhaps), or to kill his boredom by passing an hour in the cinema, one must furnish authorization by a medical counselor? The most important matter is, after all, that an exact diagnosis makes it clear that the person is really an invalid or a patient."

It seems that in Belgium the law on sick and invalidity insurance is entering into a phase of existence where ridicule can kill it.

### Hepatitis Due to Human Serum

At the Society of Medical Sciences of Luxemburg, S. Hertz has published a study on hepatitis caused by human serum. This new disease has acquired theoretic and practical importance. It has been the starting point of investigations which have led to the experimental demonstration of the infectious nature of hepatitides and of the existence of nonicteric forms of these infectious hepatitides. The frequency and gravity of these forms of icterus make necessary a strict revision of indications for the transfusion of blood and plasma. The product employed plays an important role. The incidence of icterus is especially large when dry plasma is employed. These facts are important from the prophylactic point of view and should be taken into consideration when a blood bank is organized.

Hepatitis due to human serum is due to a filtrable icterogenic virus which resembles, if it is not identical with, the virus of spontaneous hepatitis. It is seen especially after the transfusion of plasma. Its lesions are identical with those found in other infectious and toxic hepatitides. In the clinic they present a picture of hepatitis, with or without jaundice, which may lead to cirrhosis.

## BRAZIL

*(From Our Regular Correspondent)*

July 4, 1949.

### Tuberculosis and Pregnancy

Dr. Francisco Cerruti, assistant dean of Escola Paulista de medicina, recently published a symposium on tuberculosis and pregnancy according to the data obtained by the practitioners of the Maternidade de São Paulo. Dr. Cerruti made the following conclusions:

1. Pregnancy has little influence on the evolution of tuberculosis, especially when the tuberculosis is being treated.

2. Interruption of pregnancy does not improve the evolution of the bacillary process.

3. Pregnancy should not be interrupted, but intensive modern physical therapy should be used, as pregnancy does not restrict the full action of collapse therapy, and eventually streptomycin should be used.

4. There is no advantage in interruption of pregnancy in the advanced forms of tuberculosis.

5. In cases of initial evolutive forms which, after intensive collapse therapy in the first three months of pregnancy, have not shown improvement, abortion is indicated. These are rare clinical occurrences.

6. An abortion should never be performed after the third month of pregnancy.

7. For all practical purposes congenital tuberculosis does not exist, nor do hereditary dystrophies or hereditary predispositions, so that the child of a tuberculous woman, as a biologic and social entity, is equal to the child of a healthy mother if it is immediately protected from exposure.

8. Premature delivery is commoner than abortion in a woman with tuberculosis.

9. Hyperemesis and toxemia are rare in the pregnant women with tuberculosis.

10. Delivery in a tuberculous woman is more rapid and less painful.

11. The delivery should be attended in a manner which is easy, short, nonexhaustive and nontraumatic.

12. The delivery should be spontaneous when easy; if there is dystocia, it is preferable to shorten labor within obstetric possibilities, without waiting as long as in the case of a healthy pregnant woman.

13. The tuberculous patient has a tendency to postpartum hemorrhage.

14. The tuberculous woman is prone to hemorrhage; she must be attended immediately at the first sign of shock.

15. The mortality rate is relatively high during the postpartum period.

16. As a rule, a tuberculous woman should not nurse her baby.

17. BCG vaccine should be given to newborn infants.

18. It is advisable that those who have had small lesions of the productive type should become pregnant only one or two years after clinical cure, and those who have shown the exudative form should not become pregnant for a period of three or four years.

### Biliary Lithiasis

Dr. Saulo de Moura Costa, who has been assisting in the clinic of Prof. Benedito Montenegro, has completed a study on biliary lithiasis with observations on some cases in which the operative treatment was performed. He stated that early operation is considered essential for best surgical results, as in cases of long-standing disease there are associated lesions, some of which cannot be directly reached by the surgeon. He reviewed the operative cholangiographic aspects, presenting statistics of 342 cases from Professor Montenegro's private clinic. Commenting on these statistics he pointed out that in the same service the percentage of choledocholithiasis, which was 10 per cent before the cholangiographic process was in use, rose to 15 per cent after the use of this process. Besides, it has the merit of avoiding the opening of the choledochus, which is slightly dilated and which many surgeons open based on a mere suspicion. He further treated pancreatitis and stenosing odditis, in which operative cholangiography is particularly effective, indicating the cases in which drainage of the biliary tracts should be done.

### Routine Appendectomy in Gynecologic Laparotomy

An inquiry was held by Prof. Alicio Peltier de Queiroz, of the Faculdade de Medicina of Salvador, Baia, on the routine performance of appendectomy in gynecologic laparotomy. According to the replies and to his own opinion, Professor Queiroz concludes: (*a*) Almost all cecal appendixes are the site of microscopic lesions of involutive and inflammatory type; (*b*) There is no relation of cause and effect between those lesions and the condition known as "chronic appendicitis."

(*c*) A review of reciprocal relations between gynecologic conditions and appendiceal ones dismisses old beliefs still pending in many surgical minds. (*d*) It is not logical and tenable after all these facts to practice routine appendectomy in the course of gynecologic laparotomy in the present state of knowledge.

# Correspondence

## EMOTIONAL STIMULI AND EFFECTOR ORGANS

*To the Editor:*—In the conclusion of the article "Some Effects of Myanesin in Psychiatric Patients" (J. A. M. A., June 25, 1949) the authors, Schlan and Unna, state that myanesin® (tolserol®) (3-ortho-toloxy-1,2-propanediol) is the only drug that allays anxiety without clouding consciousness. For the last few years efforts have been made to prevent stimuli originating in the emotional centers of the central nervous system from reaching the effector organs. Already there are: (1) an adrenolytic drug, dibenamine (N,N-dibenzyl-beta-chloroethylamine) (Rockwell, F. V.: Dibenamine Therapy in Certain Psychopathologic Syndromes, *Psychosom. Med.* **10:** 230 [July-Aug.] 1948), and (2) a thyroid inhibitory drug, propylthiouracil (Jonas, A. D.: Propylthiouracil in the Treatment of the Anxiety State, *Med. Rec.* **161:** 422 [Aug.] 1948). Obviously, there are many more drugs with similar effect awaiting discovery. I mention here only an anticorticotropic and an antithyrotropic compound.

A. D. Jonas, M.D., New York 58.

## ESTIMATION OF URINARY SODIUM

*To the Editor:*—In The Journal of June 25 appeared an article by Bryant and his co-workers entitled "Estimation of Urinary Sodium." Certain misconceptions and questionable features should be discussed publicly, lest they aid in perpetuating ideas and practices now considered out of date.

The authors state that daily determination of sodium is expensive and so complicated as to be prohibitive even in the hospitalized patient. The flame photometer, though expensive, is a simple and relatively accurate instrument and is in wide current use. For those institutions where the equipment and technical help for this machine are not available, there are extremely simple and accurate chemical methods which do not require special equipment (Goldzieher, J. W., and Stone, G. C. H.: *J. Clin. Endocrinol.* **9:** 95-100, 1949) and are not expensive.

The authors base their test on old data which showed that sodium and chloride excretion run roughly parallel in certain special cases. The general inapplicability of such a concept is, however, well known among physiologists and is attested by the authors' own data when comparing their figures from flame photometric measurements and Volhard chloride determinations. Nearly all recent workers in cardiac physiology have recognized that chloride determinations cannot be used to study sodium metabolism; this was recently emphasized by a careful balance study (Goldzieher, J. W., and Stone, G. C. H.: *J. Clin. Endocrinol.* **9:** 368-371, 1949). The whole modern concept of electrolyte balance, as summarized so aptly by Gamble, has pointed out repeatedly that such technics are specious and wholly unsatisfactory and that the concept of "sodium chloride" as an entity, without consideration of total acid-base balance, is totally erroneous. The entire basis of this estimation of "urinary sodium" is therefore unreliable. Moreover, the title seems rather inappropriate and should have read, perhaps, "Estimation of Urinary Chloride."

Even if this fundamental problem did not exist, the value of the technic is open to question. The authors' data indicate that: (1) a sodium range of 25 to 29 mg. may require 1 to 4 drops of solution (a 400 per cent error); (2) 2 drops of reagent may indicate anything from 11 to 150 mg. of sodium per liter and 13 drops may represent anything from 330 to 820 mg. of sodium per liter, and (3) levels of 50 to 70 mg. of sodium per liter are estimated by this test at anything from 100 to 700 mg. (a 700 per cent error).

Any test, no matter how convenient, which is subject to a 700 per cent error in qualified hands is meaningless. In such circumstances it seems probable that careful inquiry by the physician or the recording of dietary intake by the patient would be far more likely to reveal actual errors in the control of sodium intake.

Joseph W. Goldzieher, M.D., New York.

## MYOCARDIAL INSUFFICIENCY

*To the Editor:*—I refer to the excellent article by Dr. George R. Herrmann on myocardial insufficiency in The Journal of June 11. On page 509 is a statement referring to the direct application of the Fick principle: "Cardiac output equals the total oxygen consumption per minute divided by auricular-ventricular oxygen difference times 100." I would appreciate your clarifying whether it should not be "arteriovenous" instead of "auricular-ventricular."

The routine application of the Fick principle in measuring cardiac output was always based on the difference between the oxygen contents or carbon dioxide contents in arteriovenous blood samples. It may be that the venous catheterization of the right atrium, right ventricle and pulmonary artery introduced a new method in measuring the cardiac output. Your explanation on the subject will be greatly appreciated.

Thaddeus D. Labecki, M.D.
Director, Sunflower County Health Department,
Indianola, Miss.

This letter was referred to Dr. Herrmann who replies:

*To the Editor:*—Dr. Labecki is right. He read the paper more carefully than I or my associates read the proof. The statement on page 509 concerning the direct application of the Fick principle should read, "cardiac output per minute equals the total oxygen consumption divided by the arteriovenous oxygen difference times 100." The only way I can explain it is that I had "A.V." in my manuscript and my secretary interpreted the A.V. incorrectly as auricular-ventricular rather than as it should have been, arteriovenous. I should have caught the error in proofreading.

The routine application of the Fick principle in measuring the cardiac output in man has been indirect. However, right heart catheterization permits the direct application in man. There is some preference for determination of the difference between oxygen content rather than carbon dioxide content in the arterial and venous blood samples. The arterial blood is taken from the femoral artery under oil. The venous blood is drawn from the right atrium by venous catheter. Catheterization has thus facilitated the collection of samples of truly mixed venous blood from man which could previously be obtained only by puncturing the right side of the heart. This was done in animals, which of course, was not justifiable in human beings, because the risk was too great. However, the dangers with the present method are practically nil. Heart catheterization has made possible the application of the direct Fick principle to human beings.

George R. Herrmann, M.D.,
Professor of Internal Medicine, Galveston, Texas.

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various Centers. Sept. 12-14. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc. *Oral.* Denver, Oct. 16-20. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

American Board of Dermatology and Syphilology, Inc.: *Written.* Various Centers, Sept. 15. *Oral.* Cincinnati, Sept. 15. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Oct. 17. Asst. Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Part I.* Various Centers. Feb. 3. Final date for filing application is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: St. Louis, Oct. 15-19; Boston, December. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Final date for filing application for Part II is Aug. 15. Address: Sec.-Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: Chicago, Oct. 7-8. Final date for filing application is Sept. 1. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: *Oral.* Cleveland, Sept. 16-18; New York City, Oct. 21-23; Chicago, Dec. 9-11. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Preventive Medicine and Public Health: *Parts I and II.* New York, Oct. 22-24. Final date for filing application is July 22. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Psychiatry and Neurology, Inc. *Special Examination.* Chicago, Oct. 24-25. December, New York City. Final date for filing applications is Sept. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Cincinnati, Sept. 28-Oct. 2. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, October 26. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written.* December. *Oral and Clinical.* Chicago, Feb. 11-15. Final date for receipt of case histories is Sept. 1, 1949. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18.

### BOARDS OF MEDICAL EXAMINERS

Alaska:* Juneau, Sept. 6. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Arkansas:* *Examination.* Little Rock, Nov. 3-4. Sec., Dr. Joe Verser, Harrisburg. *Eclectic.* Little Rock, Nov. 3. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

California: *Examination.* Los Angeles, Aug. 15-18. Sec., Dr. Frederick N. Scatena, 1020 N Street, Sacramento.

District of Columbia:* *Examination.* Washington, Nov. 14-15. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Georgia: *Examination.* Atlanta, Oct. 11-12. *Reciprocity.* Atlanta, Oct. 13. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Illinois: Chicago, Oct. 4-6. Supt. of Registration, Mr. Fred W. Ruegg, Capitol Bldg., Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Sept. 5, Oct. 3, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Minnesota:* Oct. 18-19. Sec., Dr. Julian F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

Montana: Helena, Oct. 3-5. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, Sept. 8-9. Sec., Dr. J. S. Wheeler, 107 State House, Concord.

New Jersey: Oct. 18-21. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico:* Santa Fe, Oct. 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

New York: *Examination.* New York, Albany, Syracuse and Buffalo, Oct. 4-7. Sec., Dr. Jacob L. Lochner Jr., 23 S. Pearl St., Albany 7.

Ohio: *Examination.* Columbus, December. *Endorsement.* Oct. 2. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Puerto Rico: San Juan, Sept. 6-10. Sec., Dr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

Tennessee: *Examination.* Memphis, Sept. 28-29. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis 3.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Wisconsin:* *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

Wyoming: Cheyenne, Oct. 3. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: Juneau, Aug. 28. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, Sept. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Arkansas: *Examination.* Little Rock, Oct. 4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

Colorado: *Examination.* Denver, Sept. 14-15. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

District of Columbia: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Michigan: *Examination.* Detroit and Ann Arbor, Oct. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing 15.

Minnesota: *Examination.* Minneapolis, Oct. 4-5. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

Nebraska: *Examination.* Omaha, Oct. 4-5. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln 9.

New Mexico: *Examination.* Santa Fe, Aug. 7. Sec., Miss Marguerite Kilkenny, 110 W. Houghton St., Santa Fe.

Oregon: Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

Rhode Island: *Examination.* Providence, Aug. 10. Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Wisconsin: Milwaukee, Sept. 24 and Dec 3. Sec., Prof. W. H. Barber, Ripon College, Ripon.

# Bureau of Medical Economic Research

## MEDICAL ECONOMIC REVIEWS AND ABSTRACTS

### Prepared by the Staff of the Bureau of Medical Economic Research

*(Continued from page 1117)*

**Old Age and Survivors' Insurance and Old Age Assistance in the South.** By E. J. Eberling. The South. Econ. J. 15:54-66 (July) 1948.

Based on payroll taxation to which employer and employee jointly contribute, the Old Age and Survivors' Insurance has as its greatest defect the limitation of coverage. As it excludes agricultural, domestic and self-employed workers, among others, it does not cover 46 per cent of the working groups. This amounts to discrimination against the South, the author maintains, because this section is largely agricultural. In spite of lower state incomes for provision of public assistance, it throws on these states a heavier financial burden than that borne by states with higher incomes. In turn, this increases the expenditures for the noncontributory Old Age Assistance in the South, although the original intent of the act was to decrease the Old Age Assistance slowly as payroll deductions placed an increasing number under the Old Age and Survivors' Insurance. Thus, while the Old Age Assistance number rose from 205 per thousand in June 1946 to 222 in July 1947 for the entire country, the number in the South rose from 235 to 284, showing that the other states were actually following the operation of the plan as hoped for at its institution. This increase in the Old Age Assistance is also undesirable because the noncontributary plan does not grant the same opportunities for retention of self respect and pride as the payroll deduction plan. A further result of the extended use of Old Age Assistance is the lowering of benefits to a mere pittance in many states of the South and even denial in some instances of eligible needy because of lack of funds.

In addition to the limitation of coverage by the Old Age Survivors' Insurance and its resulting complications, the benefits secured under it are inadequate in the South. Not only have the living costs there risen faster than benefit increases—a fact true throughout the nation—but the greater the number of beneficiaries of Old Age Survivors' Insurance, the lower the per capita income.

In agreement with the unheeded 1946 recommendation of the House Ways and Means Committee, Eberling calls for all-inclusive coverage under the Old Age Survivors' Insurance, contending that administrative difficulties long recognized are not insurmountable. To tide over the needy during delay in this change, he suggests federal grants to the South for public assistance, allocated on the basis of per capita income, the lower income state receiving the most aid.

More generally, the author points out the need for revision of benefits to meet the cost of living, the need for a lowered age of eligibility in the cases of women to 60, because women are usually younger than their husbands, and the need for an addition of disability insurance to the Old Age Survivors' Insurance.

**Relationship Between Per Capita Income and Mortality in the Cities of 100,000 or More Population.** By Marion E. Altenderfer, Associate Statistician, United States Public Health Service. Pub. Health Rep. 62: 48 1681-1691 (Nov. 28) 1947.

The United States Public Health Service has undertaken a study of the relationship between health status and environmental factors in all counties of the United States and in cities with 10,000 or more population. This article analyzes mortality data for the ninety-two cities with populations of 100,000 or over in order to answer the questions "What is the relation between the per capita buying income of the community and mortality from several causes?" and "What is the influence of the color composition of the population on this relationship?" Mortality data were obtained from the Bureau of the Census report on births and deaths for the period 1939-1940 and were adjusted to the age distribution of the United States population in 1940. Color composition data and population figures were taken from the 1940 census and per capita buying income statistics were from the "Annual Survey of Buying Power" published by *Sales Management.*

The ninety-two cities were divided into three groups on the basis of per capita income, and the average total, infant and maternal mortality rates were computed for each group. The average total death rate decreased from 1,212 for the lowest income group of cities to 1,097 for the middle group to 1,092 for the highest group. The infant mortality rate showed the same relationship to income, while the maternal mortality rate in the middle group was considerably lower than in the lowest group and also slightly lower than in the highest group. Average mortality rates for seventeen major diagnosis groups were computed for each of the three income groups of cities. The rates for syphilis, chronic diseases, influenza and pneumonia, appendicitis and hernia showed the same trend as total and infant mortality rates, while the rates for infectious diseases, tuberculosis, pellagra, diseases of the ear, nose and throat, and accidents other than motor vehicle accidents, cancer, cirrhosis of the liver and diseases of the gallbladder tended to increase with increased income, but the rates for diabetes and ulcer of the stomach showed no correlation with income.

In order to examine the relationship between color composition and mortality, the ninety-two cities were divided into three groups according to the percentages of white persons in the population. The group of cities with less than 90 per cent of white persons had the highest average total, infant and maternal mortality rates, while the group with 97 per cent or more of white persons had the lowest rates. A further division of the three income groups into the three color composition groups reveals the effect of this relationship between color composition and mortality on the relationship between income and mortality. With the addition of the color factor, the inverse relationship between mortality and income holds true in all but three cases; the lowest total death rate is found in the middle income group in cities with 90 to 96.9 per cent of white persons, and the lowest maternal mortality rate occurs in the middle income group in the two groups of cities with less than 97 per cent white populations. At each income level, mortality rates vary inversely with the proportion of white persons in the population. For the five disease categories (infectious, tuberculosis, syphilis, pellagra, and influenza and pneumonia) for which national nonwhite mortality rates are general higher than white rates, mortality is greatest in cities with the largest nonwhite population; the reverse is true of the four diagnoses (cancer, diabetes, goiter and gallbladder diseases) in which white rates exceed nonwhite rates. In general, the color composition of the population does not seem to affect the pattern of association between income and mortality from the seventeen diagnoses; the color differential was most prominent in the cases of exophthalmic goiter, gallbladder diseases and diabetes.

Caution should be used in drawing conclusions from the observed relationships between income and mortality rates. Low income may be the effect, as well as the cause, of ill health. Moreover, it is difficult to isolate the effects of differences of income on mortality rates from the effects of social and cultural differences such as housing, education, diet preferences, hygienic habits and willingness to make use of medical care facilities. The lower infant mortality rates in upper income groups are no doubt largely because of lower birth rates, better health education and better care of infants among higher income families. The causes of death which are positively correlated with income characteristically occur later in life than do those diseases showing a negative correlation with income. Since per capita buying power is probably greater for older persons, the observed relation between income and mortality from specific causes may be due primarily to failure to use age-specific rates in the computations. The inverse ratio between mortality and the proportion of white persons within each income group indicates that the association between mortality and color composition is due to differences in ways of life as well as to variations in income. Altogether, the data presented in the article would seem to prove the wisdom of a statement from the Brookings report on compulsory health insurance: " . . . health problems in the United States involve economic, cultural, and social racial differences and interracial relations."

**Statistical Problems in Developing Voluntary Medical Expense Insurance Plans.** By Morton D. Miller, The Equitable Life Assurance Society of the United States. J. Am. Statistical Assoc. 43: 290-299 (June) 1948.

Since 1930 the number of persons covered by hospitalization insurance has risen from almost nothing to 52,000,000. The spread of voluntary insurance plans to insure the cost of physicians' services has been even more phenomenal. Only since 1938 has the cost of surgical operations and of obstetric care been included in insurance plans; since 1943 the cost of other types of medical services has been included; yet, in 1947 over 20,000,000 persons were insured for some surgical benefits, of whom one third were also covered by some form of medical expense insurance for nonsurgical services.

While community organizations similar to and sometimes affiliated with the Blue Cross hospital service associations have participated in the development of medical care insurance, most of the coverage has been provided by the life insurance companies through group insurance (insurance in which a single master contract issued usually to an employer covers the group of his employees and often their wives and children). Cash payment is made in accordance with a schedule of maximum reimbursements in the master policy; any payment in excess of the fees in the schedule are made by the insured employee himself.

These new forms of insurance involve a great number of actuarial and statistical problems. Among these is the one of securing some basis for the establishment of the initial premium rates. The foundations for calculating these rates are frequency of occurrence of the event insured against and the average amount payable when the event occurs. On the basis of experience gained in connection with hospitalization and other forms of insurance, one company computed a scale of premium rates for group surgical insurance. Since the annual rate of hospitalization was found to be 7 per hundred for male employees and three fourths of all hospitalized cases involved surgery, the annual frequency of surgical procedures for male employees would be 5.3 per hundred. After a study of the proposed schedule of benefits, it was estimated that $50 would be the average amount of each claim. The product of the frequency and the average benefit gave $2.65 for the net annual claim cost. This figure, when increased by the amount calculated to be necessary for expenses of operation and contingencies, resulted in a gross monthly premium rate of $0.35 per male employee.

In accordance with experience under other forms of disability insurance, the gross monthly premium rate for a female employee was set at $0.70, double that for a male employee. In practice, separate premium rates were not charged for male and female employees but a composite rate was computed at the effective date of the group policy depending on the percentage of female employees covered. The gross monthly premium rate for a dependent family unit (a wife and two children) was $1.40 if obstetric benefits were excluded and $2 if obstetrics were not excluded.

The construction of initial premium scales for the group medical expense plans involved a much less satisfactory statistical basis than that used for surgical benefits. It was necessary to fall back on studies made of the utilization of medical care by uninsured persons. But such studies did not present an accurate picture, since the very presence of insurance benefits materially affect their utilization. An increase in utilization rates was a usual consequence of a reduction of the cost which would otherwise be a deterrent to the demand for such services.

Group insurance policies are written for a period of one year, subject to annual renewals thereafter. The premium rates are subject to revision upward or downward at the end of each policy year, and the policies participate in the surplus earnings of the company through a declaration of dividends or retroactive rate credits. These dividends or rate credits are computed by a method known as "experience rating," in which weight is given to the claim experience of the individual group policy and to the claim experience of the class of policies to which it belongs. Renewal underwriting and the computation of dividends or rate credits are made from a record showing premiums due and the number and amount of claims incurred for each group policy for each policy year.

These individual group experience records provide the material for further statistical analysis within a company once a plan for medical or hospitalization insurance is under way. The question arises whether there should be established, on a continuing basis, a system of coding individual claims, involving the use of all or a specific fraction of all claims or whether basic claim rates and claim costs should be developed on a continuing basis with any additional detailed information obtained from occasional sample studies designed for specific purposes. The writer believes that the additional detailed information does not warrant the cost of securing it on a continuing basis as against the lesser cost of conducting periodic or occasional sample studies.

It is desirable to pool the experience of several companies not only to improve the reliability of statistical results but to provide a standard by means of which any one company can judge the efficiency of its operations. For this reason a standing committee of the Actuarial Society of America known as the Committee to Prepare Mortality and Morbidity Studies on Group Insurance was established. Since the Committee's work was interrupted by the war, its first study, which is on intercompany morbidity experience, has just been completed for publication in the 1948 *Transactions* of the Actuarial Society. For the present, group medical insurance is not being studied, largely because of the newness of the coverage, the wide variety of plans written and the diversity in policy provisions. The committee has undertaken a sample study based on individual surgical claims to supply information regarding the relative frequency with which different surgical procedures occur and the relative values of the fees being charged by physicians for such procedures.

Although insurance against the cost of medical care is relatively new, there has already been great progress as evidenced by the phenomenal spread of such insurance plans. The statistical studies now being conducted and the experience of the insurance companies will undoubtedly contribute valuable knowledge for continued progress in this field.

**Cooperation for Rural Health.** By Helen L. Johnston, Cooperative Research and Service Division, Miscellaneous Report 123, United States Department of Agriculture, Farm Credit Administration, 1948.

Growing interest in the problems of extending health services among all parts of the population is reflected on all sides. This report presents a broad review of activities among farm groups during the years 1945 to 1947 to solve their own health problems. It is concerned principally with the programs developed by local farmer cooperatives in various parts of the country, but also includes some information on planning activity among national, regional and state farm associations.

Pertinent summaries are given on the history and development of several specific types of programs. Included are cooperative farm group enrolment in Blue Cross hospital plans, the farmer-sponsored Group Health Mutual indemnity hospital-surgical insurance plan and local prepaid cooperative health associations. The report describes the activities of four rural health cooperatives located in Oklahoma, Texas and Kansas which have built their own hospitals and employed physicians and auxiliary staff to provide service to member families. These have been in operation for five to seventeen years.

A final section presents an extensive outline of suggestions for studying, planning and developing rural health improvement programs. This report concerning self-help rural programs will provide interesting perspectives for both urban and rural physicians.

**Factors Influencing the Relative Number of Aged Beneficiaries Under Old-Age and Survivors Insurance and of Old-Age Assistance Recipients in the States.** Federal Security Agency, Social Security Administration, July 1947.

In 1946 the total population over 65 years of age was 10,272,000. There were 1,069,753 beneficiaries of Old Age and Survivors' Insurance, or 104 per thousand aged, and 2,103,536 recipients of old age assistance, or 205 per thousand aged. The ratio between beneficiary and recipient rates was 51:100.

The pattern of the old age assistance program is less well defined than that of the Old Age and Survivors Insurance because of a variation of interpretations of the former by the different states. This factor prevents a consistent relation between beneficiary and recipient rates. However, certain relationships hold in general: (1) a definite positive relation between the covered employment ratio and the beneficiary rate, (2) a positive relation between the beneficiary rate and the degree of industrialization and urbanization, and (3) a positive relation between per capita income and the beneficiary rate and a negative relation between per capita income and the recipient rate.

The beneficiary rate increased from 76 per thousand aged in June 1945 to 104 per thousand aged in June 1946, while the recipient rate increased from 202 to 205 per thousand. In the future, the beneficiary rate should grow to exceed the recipient rate.

There is nothing in the article about the proportion of old age assistance and survivors insurance funds attributed to medical care.

**Forecasts of the Population of the United States, 1945-1975.** By P. K. Whelpton, United States Department of Commerce, Bureau of the Census, 1947. **A revision of Estimates of Future Population of the United States, 1940-2000,** prepared by Warren S. Thompson and P. K. Whelpton for the National Resources Planning Board, 1943.

The forecasting of population trends is exceptionally hazardous because of the control over population size exercised by births, migration and the medical advancements in the conquest of disease. In spite of all the hazards, the Bureau of the Census has realized the importance of obtaining some estimate of the population of United States as far distant as 1975 and has made a commendable attempt to obtain such a forecast.

Mortality rates have been decreasing steadily since 1900. This is true for all age groups, with a greater decline occurring in the younger age groups than in the older. The rates for females have been lower than the rates for males, with both sexes showing a decrease at all ages. Mortality rates for the nonwhite population are considerably higher than for the white, but both decrease at about the same rate. The rate for white males decreased from 66 in 1929-1931 to 46 in 1940-1944 for the under 1 age group, whereas the rate for females decreased from 52 to 35.

Since mortality rates have decreased, life expectancies have increased for both male and female at about the same rate. However, the life expectancies are higher for females than males, and the life expectancies for nonwhites are lower than the life expectancies for whites.

Future trends are estimated on the basis of high, medium and low mortality assumptions. On the basis of each of the assumptions the mortality rates show a definite decline. The infant mortality rates are predicted to be 28 in 1975 for native white males assuming high mortality, 25 assuming medium mortality and 23 assuming low mortality. The trend is similar for females under each of the three assumptions. Decreasing mortality rates tend to increase the length of life; the life expectancies at birth are predicted to be 66, 68 and 71 respectively for the assumptions mentioned.

Since the birth rate depends more on individual behavior, whereas the death rate is influenced by medical changes, the birth rate fluctuates more widely than the mortality rate. Birth rates have decreased at all ages, but the decline was not as great for the younger age groups.

Many forecasts of the future population of the United States have been made; most of the estimates have been too low. Louis I. Dublin, of the Metropolitan Life Insurance Company, in 1931 estimated that the population would be 148,000,000 by the year 1970, and it has already reached 143,000,000 in 1947. Many others have erred in predicting too low a figure, the notable exceptions being Professors Raymond Pearl and Lowell J. Reed of Johns Hopkins University, whose predictions have almost coincided with current population figures. In 1921 they estimated that there would be 149,000,000 by 1950; it now appears that this figure will be approximately realized.

Population trends have been showing a decrease in the relative number of young persons and an increase in the relative number of old persons, and this trend is expected to continue. The population of the United States is aging, as the increasing median age clearly shows. Even though the figures predict an increase in the size of the population when any one of the projections is used, the rate of increase is becoming smaller and smaller, and the results seem to point to a stationary or even a declining population.

**Health Services in England.** By R. C. Wofinden. Price, $2.50. Pp. 186. London, Simpkin Marshall, Ltd., 1947.

This essay by Dr. R. C. Wofinden is a well organized and concise presentation of the historical development of public health legislation in England. Its emphasis is on the administration of the laws as they affect the welfare of the people. The author has reached the conclusion that the course of social and health legislation has been guided by the increasingly popular demand that poverty alone should not stand in the way of decent housing, adequate health services and opportunity for advancement. It has been enacted not primarily for the benefit of the existing poor, but for the greatest good for the greatest number. Recognizing that continued sickness leads to inability to work and thus to poverty, the authors of the legislation directed it toward remedying the causes of illness and, recently, toward preventing sickness.

Measures to improve health may spring from several motives. The humanitarian impulse has motivated many needed reforms. The state has an interest in the preservation of the health of the people. War has often been the spur to research, improved technics and more efficient use of existing medical facilities.

The author has divided the history into three stages. First, the environment of the people was seen to bear directly on their level of health, and steps were taken to improve paving, lighting, water supplies and working conditions in factories and to protect the quality of food. Secondly, infectious diseases were brought under control by isolation, education of the people in cleanliness and nutrition, biologic experimentation and mass immunization. Thirdly, it was recognized that preventive medicine was essential to raise the general level of health. The overload on doctors who are pressed for time to give adequate treatment, let alone for preventive work, coupled with ignorance and apathy on the part of many who could be helped, has rendered progress in preventive medicine difficult.

Dr. Wofinden's approach to the history of public health legislation is to list specific measures passed by Parliament, discuss important provisions of the laws and relate each act to conditions existing in the country and to earlier laws. As previously stated, his emphasis is on the administrative procedure employed under each law. He thereby demonstrates clearly that the way in which a system is devised, the people who operate it and the agencies it uses to carry out its policies govern the effectiveness of public health measures.

The original essay was written in 1946 and has been made as complete as possible by the postscript containing the recent health act. In the small and readable volume Dr. Wofinden has surveyed the history of public health in England and has established some criteria for evaluating public health services.

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# Medical Motion Pictures

## FILM REVIEWS

**The Doctor.** 16 mm., black and white, sound, 400 feet, showing time ten minutes. Prepared in collaboration with Louis W. Sauer, M.D., Northwestern University Medical School, Chicago. Produced in 1947 by and procurable on rental or purchase from Encyclopedia Britannica Films, Inc., 1150 Wilmette Avenue, Wilmette, Ill.

This motion picture depicts the role of a pediatrician in his office, at the hospital and at the home of a patient. He is shown, assisted by his office nurse, performing a routine physical examination of a young boy and vaccinating a baby for smallpox. The film then shows him making his rounds in the hospital, visiting his patients to determine the progress of each. Finally he visits a patient in a private home, at which time he makes an examination for diagnosis, prescribes for the patient and gives the mother instructions as to care.

The film also illustrates the use of such instruments as the stethoscope and blood pressure apparatus and shows how the doctor interprets the results of the roentgen examination in the diagnosis of a fracture. Other illustrations are presented which would aid in acquainting the child with the activities of a doctor in such a way as to eliminate any fear a child may have when medical care is necessitated.

In the part showing the doctor taking the temperature of a child with measles, an error in technic was noted. The doctor took the thermometer out of his bag, laid it on the bed of the patient and then inserted it in the patient's mouth. After the thermometer was withdrawn from the patient's mouth, it was replaced in its container immediately without being sterilized.

The film is suitable for showing to children in the elementary school level.

The photography and narration are excellent.

**Skin Antiseptics, Evaluation of Effectiveness of Some Widely Employed Antiseptics.** 16 mm., black and white, sound, 1,125 feet (1 reel), showing time twenty-eight minutes. Produced in 1948 by Audio Productions, Inc., New York. Procurable on loan from Iodine Educational Bureau, Inc., 120 Broadway, New York 5.

The efficiency of iodine as an antiseptic agent for preoperative preparation of the skin is compared with organic mercurial compounds. The results and calculated dilution values of numerous in vitro tests of several commonly used antiseptics are presented. In the phenol coefficient test, an antiseptic is simultaneously tested and compared with phenol under identical conditions against standard test bacteria Staphylococcus aureus and Salmonella typhosa. The weakest dilution of the antiseptic which will kill the standard test culture is ascertained by mixing certain proportions of the various dilutions of antiseptic with a broth culture of the test organism and allowing the mixture to stand for varying periods of time at a designated temperature. At specified intervals, portions of the mixture are transferred to tubes containing broth and incubated for forty-eight hours. Bacteriostasis is differentiated from bactericidal action by subculturing in a medium containing a neutralizing agent. The effective dilutions of an antiseptic against the micro-organism are revealed in the tubes in which no bacterial growth occurs. The detrimental effect of organic matter (blood serum) on the activity of all antiseptic agents is shown but is inadequately stressed. An in vivo technic incorporating intraperitoneal implantation of treated and untreated mouse tails is given. In the final analysis topical application on human skin is demonstrated and the efficacy of the agents determined by scraping with sterile knife blades which are subsequently cultured in broth.

Toxicity tests are shown in which chick embryos and skins of rabbits and guinea pigs were utilized. Histologic sections show that the antiseptics were nonirritating. The authors correctly emphasize that no single test yields consistently accurate results.

With practically no exceptions, iodine is shown to have more bactericidal effect than any of the other agents. The efficiency of soap and water cleansing is minimized. One error in technic occurs in demonstrating the agar-cup plate method in that, after the plug of agar is cut out of the medium, the cup is not sealed with a small amount of melted agar before the antiseptic is added.

The usefulness of this film is somewhat limited. It would be of interest as a summary for a series of lectures on bacteriologic technics or to surgeons who are particularly interested in skin asepsis. Several titles are superimposed over the background of periodicals and bottles. Some of these titles are difficult to read because they blend in with the background. Otherwise, the photography and narration are excellent. The photomicrographs illustrating the results of various tests and the split frame technic are especially impressive.

**Getting Ready for the Dentist.** 16 mm., black and white, sound, 325 feet, showing time ten minutes. Prepared in 1947 by Alice V. Kelliher, Ph.D., with the cooperation of Dr. Arthur A. Friend, New York University. Procurable on rental from New York University Film Library, 26 Washington Place, New York 3, or on purchase from Willow Distributing Co., Inc., 551 Fifth Avenue, New York 16.

This film shows how a child of 3 years may be prepared for a visit to the dentist through the thoughtful cooperation of parents and the dentist. Through a visit to the dentist to watch Mother have a roentgenogram, the small girl becomes acquainted with the equipment used there. At home Mother and Father play "dentist" with her until the steps in roentgen examination become part of her familiar everyday experience. She returns to the dentist's office for her own roentgenogram and goes through the experience with a minimal amount of disturbance.

The authors are to be commended on the gravity of the small child who plays "Helen"; it is much more reassuring to parents to see a grave, somewhat timid child responding to this type of treatment.

Much emphasis is placed on the adjustment of a child to roentgen examination of the teeth.

This motion picture should interest Parent-Teachers Association and child guidance groups.

The photography is good, but the narration is poor and the quality of the voice is unsatisfactory. The voice level drops at the end of most sentences.

**Safer Gastrectomy Operative Procedure.** 16 mm., color, sound, 475 feet (1 reel), showing time eleven minutes. Prepared by L. A. Alesen, M.D., F.A.C.S., Los Angeles. Produced in 1946 by Billy Burke Productions, Hollywood. Procurable on loan from the Seal-Ins Laboratories, 2857 East Eleventh Street, Los Angeles 23.

This picture illustrates the use of an Alesen T-tube in conjunction with a subtotal gastrectomy in order to prevent obstruction of the afferent loop of jejunum and to cut down the chances of disruption of the duodenal stump. The technic of doing a subtotal gastrectomy is well shown on a cadaver, and toward the end of the film certain pertinent points in the use of the Alesen T-tube are shown in an actual operative procedure.

The film is satisfactory for the purpose for which it is designed and may be of use in safeguarding against disruption of the duodenal stump by prevention of kinking of the afferent loop. The tube is sterilized in a benzalkonium chloride solution 1 to 1,000 for 15 minutes at room temperature and disintegrates in about 96 hours. Serial roentgenograms are shown to illustrate the disintegration.

From a technical point of view, if the film is used in conjunction with a lecture or conference on gastrectomy, it would be satisfactory for showing to general surgeons, medical students, interns and residents.

The surgical technic as illustrated is good. The photography is excellent.

**Diseases of the Gallbladder.** A Photographic Supplement for Lectures or Conferences. 16 mm., color, silent, 400 feet, showing time sixteen minutes. Prepared in 1949 by Hilger Perry Jenkins, M.D.; Rudolph Janda, M.D., and Douglas Packard, M.D., Department of Surgery, University of Illinois, College of Medicine, and Woodlawn Hospital, Chicago. Procurable on loan from Hilger Perry Jenkins, M.D., 826 East Sixty-First Street, Woodlawn Clinic Building, Chicago 37.

This motion picture illustrates cases with various pathologic conditions of the gallbladder. Pertinent facts in the case histories are presented, and the roentgenographic observations are well demonstrated. An attempt is not made to show the complete story as to causation, diagnosis, treatment, prognosis, complications and the like. The picture shows the nature of the condition as seen at the operating table or in the pathologic laboratory.

This film can be recommended as an adjunct to a lecture or conference on gallbladder diseases to general surgeons, residents, interns and medical students. The film is well captioned and the photography is good.

**Let's Look at Water.** 16 mm., black and white, sound, 776 feet (1 reel), showing time twenty minutes. Produced in 1947 by the National Film Board for the Department of National Health and Welfare, Ottawa. Procurable on rental or purchase from the National Film Board of Canada, 620 Fifth Avenue, New York 20 and 400 West Madison Street, Chicago 6.

This motion picture illustrates the functions of a water purification system. It shows how water serves all forms of life, demonstrating ways water can be contaminated and how water may be a source of disease. There seems to be much extraneous material in the film, which includes a considerable amount of stock footage on India and China and several close-ups of still pictures. A little judicious editing would improve the picture. This is an excellent informational film to be used for adult study groups, high school and college students studying water purification. It could not be used effectively in such groups as parent-teachers' association and women's clubs, since it is technical in sections, and some of the procedures are not applicable in the United States. The photography and narration are good.

**Manson's Blood Fluke.** 16 mm., black and white, sound, 592 feet (1 reel), showing time nineteen minutes. Produced in 1948 by and procurable on loan from the Federal Security Agency Public Health Service, Communicable Disease Center, 605 Volunteer Building, Atlanta 3.

This motion picture depicts in detail the life cycle of the parasitic blood fluke Schistosoma mansoni. It shows the ciliated miracidia hatching from spined eggs and penetrating certain Planorbid snails. Within the snail each miracidium becomes a primary sporocyst. Germ cells of the primary sporocyst grow into secondary sporocysts, which in turn produce thousands of cercariae. The cercariae escape from the snail into the water. The mode of infection is clearly presented by showing the parasites penetrating human skins, migrating through the blood vessels to the lungs and traveling to the portal veins of the liver, where they reach maturity. The adult worms live in the mesenteric veins of the colon, feed on blood and lay eggs within the blood vessels. Some of the ova escape through the bowel mucosa into the fecal mass, while others remain in the bowel wall and cause scarring and others migrate to the lungs from the hemorrhoidal veins and cause fibrosis. Clinical cases are shown in their native environment. In 1 case, the patient is followed to the postmortem table. The film ends with a recapitulation of the major concepts which serves to unify the whole. The geographic distribution of this infection is not mentioned. It is really needed to complete the picture. This is an excellent teaching film for general practitioners, parasitologists, postgraduate students and medical students. The photography and animation are well done.

# Current Medical Literature

## AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

### Alabama State Medical Assn. Journal, Montgomery

#### **18**:209-232 (Feb.) 1949

Answers to Some Questions in Venereal Serology. H. P. Sawyer. —p. 209.

Possible Application of XYZ Factors in Biologic Classification of Tumor Cells. A. E. Casey.—p. 213.

Inversions and Ruptures of Uterus. J. E. Garrison.—p. 216.

#### **18**:233-268 (March) 1949

The Future of Isotopes in Medicine and Surgery. H. Acuff.—p. 233.

Major Neuralgias. W. G. Haynes.—p. 242.

Practical Management of Acne. P. G. Reque.—p. 247.

### American Journal of Clinical Pathology, Baltimore

#### **19**:99-200 (Feb.) 1949

Dynamic Equilibrium. P. R. Cannon.—p. 99.

Outline for Identification of Salmonellas. O. Felsenfeld.—p. 106.

*Aminopterin® (Folic Acid Antagonist) in Treatment of Leukemia. L. M. Meyer, H. Fink, A. Sawitsky and others.—p. 119.

*Use of Folic Acid Antagonist in Chronic Leukemia. L. Berman, A. R. Axelrod, E. C. Vonder Heide and E. A. Sharp.—p. 127.

Further Evidence for Antibodies of Third Order: Fractionation of Agglutinins, Blocking Antibodies and Cryptagglutinoids by Physicochemical Methods. J. M. Hill, S. Haberman and Ruth Guy.—p. 134.

Method for Quantitative Measurement of Complement Fixation. E. E. Ecker and C. W. Hiatt.—p. 141.

Pooled Sheep Cells for Use in Hemolytic System of Complement Fixation Test. Thelma F. Muraschi and V. N. Tompkins.—p. 152.

Specificity of Cardiolipin Antigens in Tests for Syphilis. Sara C. McDearman and J. E. Cottrell.—p. 156.

Studies on Phagocytosis. II. R. Altschul and Aganeta M. Friesen. —p. 163.

Phosphatases in Blood of Man: Values in Whole Blood, Plasma, Cytolysates and Erythrocytic Suspensions. H. Behrendt.—p. 167.

**Aminopterin® in Leukemia.**—Meyer and his associates report observations on 43 patients with leukemia, who were treated with aminopterin® (4-aminopteroylglutamic acid). Only 4 patients showed improvement in hematologic and clinical pictures. The 4 improved patients were children; 3 had leukemia of the acute lymphoid type and 1 of the acute myeloid type. Of the other 39 patients, 15 showed toxic effects of the drug, necessitating discontinuance of treatment, and in the remaining 24 the clinical course was unaffected. Beneficial and toxic effects could not be related to dosage according to weight or to the simultaneous administration of liver extract or teropterin® (sodium pteroyl triglutamate). The unpredictable action of aminopterin® and its evident toxicity indicate that this drug will have limited use in the treatment of leukemia. Other related less toxic compounds may be of greater value.

**A Folic Acid Antagonist in Chronic Leukemia.**—This study by Berman and co-workers is based on observations of the effect of the folic acid antagonist aminopterin® (4-aminopteroylglutamic acid) in 9 patients with chronic leukemia. One of the patients with myelogenous leukemia received two series of treatments. The drug was taken orally in daily doses ranging from 1.25 to 7.5 mg. over periods of six to twenty-five days. Stem cells, granulocytes and immature lymphocytes decreased in number during treatment, but mature lymphocytes were relatively unaffected. There was no regular effect on the erythrocyte and platelet counts. There was a disturbance of erythropoiesis characterized by the appearance of megaloblasts in the marrow of treated patients, reflecting folic acid deficiency produced by the use of the folic acid antagonist. Although 4-aminopteroylglutamic acid has a definite hematologic effect, there was no subjective improvement in any of the patients. The use of the drug in chronic leukemia is limited by the early development of toxic phenomena.

### American Journal of Psychiatry, New York

#### **105**:561-640 (Feb.) 1949

Current Developments and Problems in Military Neuropsychiatry. J. M. Caldwell Jr.—p. 561.

Involutional Psychoses: Sociopsychiatric Follow-Up Study. W. Malamud, S. L. Sands, Irene T. Malamud and P. J. P. Powers.—p. 567.

Comparative Lymphocytic and Biochemical Responses of Patients with Schizophrenia and Affective Disorders to Electroshock, Insulin Shock and Epinephrine. E. H. Parsons, E. F. Gildea, Ethel Ronzoni and S. Z. Hulbert.—p. 573.

*Psychosurgery: Retrospects and Prospects Based on Twelve Years' Experience. W. Freeman.—p. 581.

Influence of Electroconvulsive Treatment on Blood Sugar, Total Number of Leukocytes and Lymphocytes. K. Stern, Brigitte A. Askonas and A. M. Cullen.—p. 585.

New Possibilities in Private Psychiatric Practice. E. P. Oberndorf. —p. 589.

Insanity Plea in Crime: Evaluation of 1927 Law. C. A. Rymer. —p. 594.

Aspects of Concentration Camp Psychology. P. Friedman.—p. 601.

Evaluation of Psychiatric Examination. O. Diethelm.—p. 606.

Psychologic Significance of Physical Restraint to Mental Patients. M. H. Erickson.—p. 612.

Clinical Importance of Some Normal Attitudinal and Ideologic Transitions of Midlife. E. G. Billings.—p. 615.

Sociopsychiatric Study of Twenty-Five Young Offenders. E. T. Adelson, C. Sugar and S. B. Wortis.—p. 619.

Hypnosis in Electric Shock Treatment. L. T. Maholick and J. Warkentin.—p. 623.

**Psychosurgery.**—Freeman mentions some of the newer psychosurgical operations and discusses the considerations that should influence the psychiatrist in his choice of operation. The mortality rate and the incidence of convulsive seizures have to be considered. Prefrontal lobotomy has a fatality rate in the neighborhood of 3 per cent. The open operation in the hands of skilled surgeons like Love and Poppen has seen a reduction below 2 per cent. No fatalities have followed topectomy and only one in a series of more than 200 transorbital lobotomies. Operative mortality statistics with regard to other operations are not adequate because of the small number of cases. Convulsive seizures follow any injury to the brain in a certain percentage of cases. In lobotomy the liability to convulsions is directly proportional to the amount of damage. Convulsions are not necessarily disabling, and they tend to disappear in the course of time and with medicinal treatment, but they are embarrassing to the surgeon and distressing to the families of patients. Incidence of convulsive seizures cannot be adequately estimated until some five years have elapsed after operation.

### Annals of Surgery, Philadelphia

#### **129**:289-416 (March) 1949

*Massive Hematemesis: Analysis of 300 Consecutive Cases. C. Costello. —p. 289.

*Management of Bleeding Duodenal Ulcers. R. W. Fraser and J. P. West.—p. 299.

Effect of Injury on Wound Healing. P. Sandblom.—p. 305.

Surgical Management of Chronic Recurrent Intestinal Obstruction Due to Adhesions. J. W. Lord Jr., E. L. Howes and N. Jolliffe.—p. 315.

Wedge Osteotomy for Fresh Intracapsular Fractures of Neck of Femur. A. F. DePalma.—p. 323.

Tissue-Culture Evaluation of Viability of Blood Vessels Stored by Refrigeration. E. C. Peirce II, R. E. Gross, A. H. Bill Jr. and K. Merrill Jr.—p. 333.

Medical and Surgical Treatment of Hypertension. F. L. Reichert, V. Richards, E. Holman and others.—p. 349.

Control of Hemorrhage from Wounds of Coronary Vessels by Gelatin Sponge Patch Technic: Experimental Study. H. Reiser, D. S. Fox and H. P. Jenkins.—p. 358.

Total Gastrectomy for Carcinoma of Stomach. J. P. West.—p. 373.

*Chemosurgical Treatment of Tumors of Parotid Gland: Microscopically Controlled Method of Excision. F. E. Mohs.—p. 381.

Resection of Sternum for Metastatic Carcinoma. D. A. Campbell.—p. 394.

Hypernephroma Metastatic to Thyroid Gland: Report of Case. G. R. Denton and J. C. McClintock.—p. 399.

Retrograde Intragastric Intussusception of Jejunum Following Subtotal Gastrectomy: Report of Case, Apparently Second Such in Literature. A. E. Grimes.—p. 404.

Wandering Spleen: Report of Case Complicated by Traumatic Cyst. M. L. Dowidar.—p. 408.

**Massive Hematemesis; Analysis of 300 Cases.**—Costello says that in the management of massive hematemesis one encounters a divergence of opinion as to whether treatment should be medical or surgical. Other problems in therapy include those concerning the advisability of using gastric siphonage, oral feeding, blood transfusions and sedation. The author studied 300 patients who had had massive hematemesis. Chronic duodenal ulcer accounted for 171 of the 300 patients with massive hematemesis. Acute gastritis, chronic gastric ulcer, ruptured esophageal varix, chronic gastritis and gastric carcinoma were the causes in other patients. Of the 75 patients who died, 71 had not received adequate blood replacement. Therapy should primarily be directed not toward surgical closure of the injured vessel, which natural processes often will close spontaneously, but toward support of the depleted blood volume. The theory that restoring blood pressure risks "blowing out" a forming thrombus has no scientific proof. During the past two years, 73 patients were treated by prompt blood replacement. Operative intervention was not undertaken. Feeding varied between the Meulengracht diet, the Sippy diet, liquid diet and protein dextrimaltose ("predigested") liquids. Only 4 per cent of this group of 73 patients died as compared with 25 in the 300. The author recommends the following plan for the treatment of massive hematemesis during the actively bleeding stage: (1) careful determination of blood needs by the copper sulfate falling drop method repeated frequently; (2) complete restoration of blood as promptly as possible; (3) oral administration of predigested protein-carbohydrate-vitamin mixture, and (4) adequate sedation. After control of hemorrhage and the restoration of nutrient and blood essentials, the advisability of elective surgical intervention may be determined more easily. The authors advise against surgery, indwelling stomach tube with constant suction, gastric lavage and active diagnostic studies during the bleeding stage because these measures were shown to increase mortality.

**Management of Bleeding Duodenal Ulcers.**—According to Fraser and West, opinions are changing with regard to the urgency of immediate surgical intervention in bleeding duodenal ulcers. They reviewed the records of 177 patients with severe bleeding from duodenal ulcers. The diagnosis was established by roentgenography, operation, or, in the fatal cases, by necropsy. The criteria of severe bleeding were a drop in hemoglobin to 65 per cent or less and a reduction in red cells to 3,500,000, or less. One hundred and eight of these patients had a hemoglobin level of less than 50 per cent and a red cell count of less than 2,500,000. Among the 177 cases there were 11 deaths, a mortality rate of 6.2 per cent. One hundred and sixty-five patients were treated by nonoperative measures with 7 fatalities, a mortality rate of 4.2 per cent. Twelve patients did not show a satisfactory response to conservative treatment, and all were operated on in the late period; that is, after more than forty-eight hours of rapid blood loss. Four of these died, a mortality rate of 33.3 per cent. The authors cite figures which indicate that age is of some importance in estimating the chance of survival of a patient under conservative treatment. Of patients beyond 50 years of age who died of hemorrhage, the advent of the bleeding phase of the ulcer generally was accompanied by additional pathologic conditions which contributed materially to the ultimate demise. Arteriosclerosis appeared to be one of the most important contributary causes of death.

**Chemosurgical Treatment of Tumors of Parotid Gland.**—Mohs stresses that in the treatment of tumors of the parotid gland complete removal of the neoplasm must be combined with the preservation of as much as possible of the facial nerve, which traverses the parotid gland. The attainment of these goals is facilitated by the use of the chemosurgical technic. Application of this method in the treatment of cancer of the lip, nose, ear, eyelid, face, extremities, trunk and skin has been described earlier. The author reports a man, aged 80, with a deep-seated mass just below the ear. Premedication with 0.015 Gm. of morphine sulfate was followed in his case by application of the keratolytic dichloracetic acid. Whitening of the skin indicated when the keratin layer had been penetrated. The zinc chloride fixative paste was then applied in a thickness of about 3 mm. The paste contained stibnite (80 mesh sieve), 40 Gm., powdered sanguinaria, 10 Gm., and saturated solution of zinc chloride, 34.5 cc. The treated area was covered with cotton and a moisture-tight closure. After twenty-four hours a layer about 1 cm. thick was excised. There was no pain or bleeding, because the incision was made through killed and fixed tissue. Frozen sections revealed the presence of squamous cell carcinoma with grade 3 malignancy. During the next four days the tumor mass was removed in successive layers. On the fifth day it became impossible to differentiate grossly between normal and cancerous tissues. The layers of tissue from the areas in question were divided into specimens of convenient size; frozen sections were cut and scanned under the microscope and the areas of cancer were marked on a map corresponding to a map drawn on the lesion. Reapplication of the fixative was then limited to the areas demonstrated to be cancerous. This process was repeated daily until the twentieth day, when the removal of the last extension of the cancer was completed. In some areas the microscopically visualized extensions of the neoplasm extended more than 2 cm. beyond the grossly visible portion. One extension followed the perineural lymphatics of the auriculotemporal nerve, while another followed the perimesium of the stylohyoid muscle. Without the systematic microscopic control afforded by the chemosurgical method these extensions would have been missed. On return for checkup two months later the lesion had completely healed with a fine linear scar. The patient was free of cancer when last seen seven years later. Despite the extensiveness of the lesion there was no facial nerve paralysis except for the unimportant mandibular branch. Thirteen of the 17 patients treated by this method had carcinoma and 4 had benign mixed tumors of the parotid gland. The rate of cure in the patients with carcinoma was 60 per cent in the five year period of observation. All of the patients with benign mixed tumor of the parotid gland were successfully treated.

## Archives of Internal Medicine, Chicago

### 82:113-216 (Aug.) 1948

Acute Diffuse Interstitial Fibrosis of Lungs: Report of Case. B. P. Potter and I. E. Gerber.—p. 113.
*Clinical Experience with Nitrogen Mustard Therapy. R. Goldman, R. O. Egeberg, E. R. Ware and others.—p. 125.
Osteopetrosis. W. J. Cassidy, F. C. Allman and G. J. Keefe.—p. 140.
*Association of Hepatic Insufficiency with Chronic Ulcerative Colitis. H. M. Pollard and M. Block.—p. 159.
Study of Tremor in Soldiers. J. J. Silverman.—p. 175.
Pernicious Anemia in Tropical Negro. S. P. Zimmerman and S. Dugger.—p. 184.
Clinical Observations in Cases of Massive Myocardial Infarction. A. Selzer.—p. 196.
Primary Malignant Disease of Small Bowel. D. S. Likely, J. R. Lisa, M. H. Stitch and H. D. Stein.—p. 206.

**Clinical Experience with Nitrogen Mustard.**—The Veterans Administration Hospital, West Los Angeles, Calif., has been designated as a center for the treatment of tumors. This provided a relatively large number of patients with leukemia and lymphoma. Goldman and co-workers treated 40 male patients with Hodgkin's disease, lymphosarcoma, leukemia and related diseases with bis-beta-chloro-ethyl-amine hydrochloride (nitrogen mustard). The results obtained are similar to those reported in the literature. Nitrogen mustard appears to be an effective drug in the treatment of Hodgkin's disease, and in some cases of lymphosarcoma, leukemia, mycosis fungoides and polycythemia vera. It appears to offer symptomatic relief in some instances of terminal and metastatic carcinoma of diverse origin. The therapeutic application of the drug results in a prompt response which is more rapid than that which occurs after roentgen therapy, but the remission produced is of much shorter duration.

**Association of Hepatic Insufficiency with Chronic Ulcerative Colitis.**—Pollard and Block say that study of hepatic function in patients with chronic idiopathic ulcerative colitis by means of the bromsulfalein test, cephalin-cholesterol flocculation test, prothrombin time and serum protein revealed the presence of hepatic insufficiency in approximately 50 per cent of the 70 cases investigated. The bromsulfalein and cephalin-cholesterol flocculation tests appeared the most satisfactory indicators of hepatic insufficiency. In 11 of 17 cases of chronic ulcerative colitis studied post mortem, there was histologic evidence of a hepatic pathologic process. Degenerative fatty infiltration was most common, but definite cirrhosis was present in 2 instances. Four cases of cirrhosis of the liver associated with chronic ulcerative colitis are reported. In 2 instances the cirrhosis had its onset prior to the colitis and was probably not related etiologically to the latter. In the other 2 cases the cirrhosis had its onset after the colitis. Evidence is presented to indicate that hepatic insufficiency in association with ulcerative colitis probably has its origin in fatty changes in the liver that occur as a consequence of severe malnutrition or toxemia or both.

## Archives of Neurology and Psychiatry, Chicago

61:1-98 (Jan.) 1949

- *Cerebral Injuries Due to Explosion Waves—"Cerebral Blast Concussion": Pathologic, Clinical and Electroencephalographic Study. F. Cramer, S. Paster and C. Stephenson.—p. 1.
- *Vocalization and Arrest of Speech. W. Penfield and T. Rasmussen. —p. 21.
- Poliodystrophia Cerebri Progressiva (Infantilis): Report of Case. E. Christensen and K. H. Krabbe.—p. 28.
- Effect of Carbon Dioxide on Acrocyanosis in Schizophrenia. M. D. Altschule and W. M. Sulzbach.—p. 44.
- Paroxysmal Lacrimation (Syndrome of Crocodile Tears) and Its Surgical Treatment: Relation to Auriculotemporal Syndrome. F. C. Boyer and W. J. Gardner.—p. 56.
- Meningosarcoma with Pulmonary Metastasis: Report of Case. A. J. Swingle.—p. 65.

**Cerebral Blast Concussion.**—Cramer and co-workers state that trauma to the cerebrum comprehended by the term "cerebral blast concussion" may vary from true "commotio cerebri" to multiple petechial hemorrhages of the brain or to actual contusion. The term "blast" refers to the wave of intensely positive pressure produced by a high explosive, just outside the "zone of brisance," within which everything is disintegrated. Just beyond that zone the blast wave has traumatic effectiveness, but thereafter it becomes merely a sound wave. Most of the cases on which this report is based were those of men evacuated from the front with neuropsychiatric problems. In about half of them the primary diagnosis was "psychoneurosis." The diagnosis of chronic subdural hematoma was suspected in some on the basis of a persistent headache, abnormalities of the reflexes, inequalities of the pupils and, rarely, a shift of the pineal gland to one side of the midline, as seen in roentgenograms. In some cases surgical explorations had ruled out hematoma. A psychiatric approach was used during the early observation in most. In the Zone of the Interior, patients who were suspected of having sustained organic lesions were examined as carefully as though one were searching for cerebral tumor. The authors present a detailed history of one patient who had sustained cerebral concussion from a nearby mortar shell blast. The patient exhibited prolonged unconsciousness, amnesia, post-traumatic headache, dizziness, irritability and intolerance to noises. Death followed three months later of delayed post-traumatic cerebral hemorrhage from an area of post-traumatic encephalomalacia. The authors point out that most of the reports on "blast injury" in the literature deal with injuries to the abdominal and thoracic viscera. In these cases of severe injury, the mental disturbances and the lesions in the brain are often commented on only incidentally. The authors made electroencephalograms on 441 cases in which the clinical diagnosis of "blast concussion" had been made. Unconsciousness had occurred in 329 cases. Bleeding from the ears or nose, rupture of the drum membrane or conjunctival hemorrhages occurred in 77 cases. In 5 cases convulsive seizures followed exposure to blast. The electrocardiograms of the 441 patients who were exposed to blast concussion showed a significantly higher incidence of borderline and abnormal tracings than was found in 140 control subjects. The authors feel that their observations are consonant with the facts reported by others who assert that blast concussion is a definite clinical and pathologic entity.

**Vocalization and Arrest of Speech.**—Penfield and Rasmussen record observations on (1) vocalization as a response to stimulation of the human cerebral cortex and (2) arrest of speech by means of stimulation. They have supplemented these observations by reference to the effect of excision of areas of sensorimotor convolutions in the dominant or the nondominant hemisphere. They gained the impression that there is a zone in the sensorimotor convolutions of each hemisphere in which vocalization, lip movement and tongue movement are represented bilaterally. These areas may be called the word articulation zones. If one zone is removed, the functional activity of the other makes speech possible, although there may be transient anarthria. Evidence indicates the presence of a frontal speech area and a parietal speech area in the dominant hemisphere. The functional integrity of these two areas is essential to the mental processes involved in speaking. These two speech areas might be considered a second motor and a second sensory area corresponding to the sensorimotor zone for lips, tongue and vocalization. But the essential neuronal connections between these second speech areas and the sensorimotor zone are not transcortical, as shown by the fact that the face area, as well as the dominant arm area, can be removed without producing aphasia. Consequently, the essential neuronal connections of the second speech areas must be via subcortical pathways to the sensorimotor word articulation area of the rolandic convolution on both sides.

## Archives of Ophthalmology, Chicago

41:1-124 (Jan.) 1949

- Beta Radiation Therapy. A. D. Ruedemann.—p. 1.
- Motor Block of Extraocular Muscles by Deep Orbital Injection. H. Gifford Jr.—p. 5.
- Responses to Ishihara Test for Color Perception. J. B. Nolasco and D. Rodil.—p. 20.
- Interstitial Keratitis and Vestibuloauditory Symptoms Following Vaccination. E. Rosen.—p. 24.
- *Retinoblastoma (Retinal Glioma) Cured by Radon Seeds: Report of Case. J. Waldman and C. E. G. Shannon.—p. 32.
- Mydriatics: Clinical Observation. J. B. Feldman.—p. 42.
- Malignant Retrobulbar Neuritis. A. Fuchs.—p. 60.
- Technic of Goniotomy for Congenital Glaucoma. O. Barkan.—p. 65.
- Use of Propionates in Ophthalmology: Preliminary Report. F. H. Theodore.—p. 83.

**Retinoblastoma Cured by Radon Seeds.**—Waldman and Shannon report a patient in whom retinoblastoma had been verified by microscopic and gross study of the enucleated eye. The patient has been treated and observed for twelve years. Retinoblastoma in the remaining eye has been treated, with cure for a period of nine years. Enucleation of the left eye was performed in 1935, when the patient was 18 months of age. The optic nerve was microscopically free of tumor cells. Roentgen rays were given to the right eye. The total of 3,104 r given was far below the dose advised by the fractionated method of Martin and Reese. In November 1938, 2.5 millicuries of radon was applied in dental compound and sewed to the overlying sclera. Five applications of radon seeds were used in a holder from March 1939 to May 1942. The patient was 10 months old when treatment was instituted and is 13½ years old at the time of this report. Typical irradiation cataract and changes in the fundus, probably incidental to radon therapy, are described. Visual acuity is 6/60. The patient attends a sight-saving school. The changes in the lens, and perhaps the macular changes, may become more pronounced. In retrospect, the areas thought to be new growths in April 1942 may have been a late reaction to the radon applied previously.

## Archives of Pathology, Chicago

46:289-400 (Oct.) 1948

- Sarcoidosis Involving Heart: Report of Case with Sudden Death. T. M. Scotti and C. E. McKeown.—p. 289.
- *Chronic Inflammatory Lesions of Skeletal Muscle in Rheumatoid Arthritis and in Other Diseases. M. A. Ogryzlo.—p. 301.
- *Plasma Cell Mastitis. Béla Halpert, J. M. Parker and J. M. Thuringer. —p. 313.
- Quantitative Approach to Study of Splenomegaly. A. J. Gordon, E. C. Holder and S. Feitelberg.—p. 320.
- *Viral Versus Toxic Hepatic Necrosis. H. Popper and M. Franklin. —p. 338.
- Hepatic Heterotopy in Splenic Capsule. G. J. Heid Jr. and E. Von Haam.—p. 377.
- Medionecrosis of Aorta. G. D. Amromin, J. G. Schlichter and A. J. L. Solway.—p. 380.
- Mammary Lipoma. C. G. Tedeschi.—p. 386.
- Absence of Renal Lesions in Rats Receiving Synthetic Diet Low in Protein. Elizabeth Lowenhaupt.—p. 398.

**Chronic Inflammatory Lesions in Rheumatoid Arthritis.**—Ogryzlo states that in 1945 Freud and associates described small inflammatory nodules in the muscles of amputated lower limbs of a patient with rheumatoid arthritis and substantiated this finding by consistently demonstrating lesions in biopsy specimens from 14 patients with typical rheumatoid arthritis. These authors and others regarded the lesion as specific and essential in rheumatoid arthritis. They considered the associated muscle degeneration as a consequence of the inflammatory lesion. The application of this new finding as an aid to diagnosis was advocated. The present study was undertaken to determine the specificity of the lesion. Sections of skeletal muscle taken routinely during the past ten years in the departments of pathology, surgical pathology and neuropathology of the Toronto General Hospital were reviewed, as well as additional sections obtained in a group of selected cases. The latter were chosen from among cases of disease in which pathologic changes of muscle might be expected to occur. A total of 158 cases were examined. Ogryzlo says that inflammatory lesions of skeletal muscle of the type which have recently been described in patients with rheumatoid arthritis were also found in patients with rheumatoid arthritis, dermatomyositis, periarteritis nodosa, disseminated lupus erythematosus and subacute bacterial endocarditis. Indistinguishable lesions were also encountered in cases of Addison's disease, hyperthyroidism, myasthenia gravis, fascioscapulohumeral atrophy, subacute combined degeneration and peripheral neuritis. The lesions were marked by focal, perivascular or, occasionally, more diffuse collections of cells. The cells were mainly lymphocytes and a few plasma cells. Polymorphonuclear leukocytes, eosinophils and large, pale mononuclear cells were present in varying proportions. The lesions are regarded as nonspecific in character. They showed no constant relationship to the degree of degenerative change present in the muscle.

**Plasma Cell Mastitis.**—According to Halpert and associates plasma cell mastitis was first described in 1931 and later recognized as a pathologic entity. Since then 45 cases have been reported, but in none of them was the disease associated with carcinoma of the mammary gland. In 1947, Gaston reported cases in which the concurrence with carcinoma was mentioned. The authors present 3 patients with plasma cell mastitis and 3 patients with carcinoma of the mammary gland in whom there was cellular reaction with plasma cells predominating about acini and ducts believed to be independent of the carcinoma. Plasma cell mastitis may be redefined as a focal chronic inflammatory process in the mammary gland. Plasma cells are dominant in the inflammatory process and far outnumber all the other cells participating in the reaction. The cause of the lesion is unknown. Multiple areas of fat necrosis often accompany plasma cell mastitis. In the 3 cases of plasma cell mastitis there were areas of fat necrosis; either fat necrosis, or plasma cell mastitis alone, or both in combination form a solid mass, indefinitely delineated, not unlike carcinoma. In the 3 cases of carcinoma of the mammary gland there was a cellular reaction in which plasma cells predominated. The fact that most of the cellular reaction was about the acini and ducts of the mammary gland and in areas distant from the neoplastic involvement favors the view that the plasma cell reaction was independent of the carcinoma. Accurate history may aid in the differential diagnosis. A firm mass appearing in the mammary gland following trauma and persisting for years with no appreciable change in size suggests fat necrosis. A firm mass appearing in the mammary gland without a history of trauma and persisting for years with no appreciable change in size suggests plasma cell mastitis. A sudden increase in the size of either type of mass points toward a combination with carcinoma. The nature of the mass can be determined only by microscopic examination. Radical operation is indicated only in case the mass proves to be cancerous.

**Virus Versus Toxic Hepatic Necrosis.**—Popper and Franklin point out that epidemiologic considerations were primarily responsible for the acceptance of a viral causation of the different forms of hepatitis encountered in the armed forces in World War II. The question arises whether in the civilian population most instances of a similar clinical picture of primary acute hepatitis without known epidemiologic background are of the same, presumably virus, causation. The livers of patients dying of acute primary hepatic necrosis with jaundice in the past nineteen years in a large civilian institution (histologic material was available in 95 out of a total of 136 cases) were compared by the authors with those of a much smaller number of Army personnel. Among 18 of the military specimens 15 revealed various stages of epidemic hepatitis (as described by Luché), whereas 3 revealed a different histologic picture. Among 95 civilian specimens 26 showed changes comparable with those in the majority of the livers from Army personnel, whereas 69 revealed central, peripheral or fatty necrosis. The histories elicited from the patients of the latter group indicated that one fifth had been exposed to substances known to be hepatotoxic. The hepatitis of the former group was considered due to virus, whereas that of the latter was called toxic because it was morphologically similar to the pathologic process observed in man and animals following exposure to substances established as hepatotoxic. The "virus" form, which spreads irregularly throughout the liver, reveals sudden death of the liver cells. The cells break up into small fragments or hyalinize diffusely. This process is associated with an energetic mesenchymal reaction involving chiefly mononuclear phagocytosing cells. In the "toxic" form, in contrast, zonal arrangement is more prominent, the death of cells is gradual and large anuclear cell remnants or fragments are visible, which show shadows of cellular structure; the mesenchymal reaction is subdued, and the inflammatory cells, if present, are often polymorphonuclear; fatty changes are common. The liver is usually larger in the toxic than in the virus form. Renal damage, with azotemia, is greater in the acute toxic than in the acute virus form. In chronic phases of the virus form, "toxic" manifestations may appear in the preserved parenchyma, which may be due to anoxia caused by disturbances of the blood flow. An attempt is made to explain the difference of the morphologic pictures by different mechanisms and speeds of the "virus" and the "toxic" injurious process. Although the term "hepatitis" for these forms of hepatic necrosis appears unsatisfactory from a pathologic standpoint, it may for the time being be retained because of its widespread clinical use.

## Arkansas Medical Society Journal, Fort Smith

### **45**:147-164 (Jan.) 1949

Bronchiectasis. D. H. Shipp.—p. 147.
Program for Management of the Cerebral Palsied. S. B. Thompson. —p. 151.

### **45**:165-184 (Feb.) 1949

Pioneer Doctors of Jefferson County. Mrs. R. D. Dickins.—p. 165.
Pioneer Doctors of Bradley County. Mrs. W. J. Hunt.—p. 168.
Cancer of Rectum and Pelvic Colon. H. E. Bacon and A. C. Hering. —p. 170.

### **45**:*185-216* (March) *1949*

Gastroscopy: Diagnostic Aid. A. Kahn Jr.—p. 185.
Primary Pelvic Abscess Due to Staphylococcus Albus. H. S. Stern and H. J. Morris.—p. 187.

## Cancer, New York

### **2**:*1-190* (*Jan.*) *1949*

*Nitrogen Mustards in Treatment of Leukemia. J. H. Burchenal, W. P. L. Myers, L. F. Craver and D. A. Karnofsky.—p. 1.
Adenocarcinoma of Appendix. G. Lesnick and D. Miller.—p. 18.
Cancer of Colon and Rectum: Twelve-Year Survey of 142 Cases in a General Hospital. J. E. Bleicher.—p. 25.
*Reorientation on Histogenesis and Clinical Significance of Cutaneous Nevi and Melanomas. A. C. Allen.—p. 28.
Effect of Folic-Acid Derivatives on Sarcoma 180. E. B. Schoenbach, A. Goldin, B. Goldberg and L. G. Ortega.—p. 57.
Coexistent Bronchogenic Carcinoma and Active Pulmonary Tuberculosis. E. Robbins and Gertrude Silverman.—p. 65.
Comparative Thiamine Saturations in Women with Uterine Cancer and in Normal Women. J. W. Jailer.—p. 98.
Cancer Chemotherapy: Analysis of Results of Different Screening Technics with Nitrogen-Mustard Analogues. D. M. Shapiro, A. Goldin, B. H. Landing and others.—p. 100.
Studies on Chemotherapy of Leukemia: II. Effect of 4-Amino-Pteroylglutamic Acid and 4-Amino-N-methyl-Pteroylglutamic Acid on Transplanted Mouse Leukemia. J. H. Burchenal, J. R. Burchenal, M. N. Kushida and others.—p. 113.
Preliminary Studies on Effect of 2,6-Diaminopurine on Transplanted Mouse Leukemia. J. H. Burchenal, A. Bendich, G. B. Brown and others.—p. 119.
Alterations in Nucleic Acids During Hepatoma Formation in Rats Fed p-Dimethylaminoazobenzene. R. E. Stowell.—p. 121.
Histochemical Studies on Abnormal Growth of Human *Endometrium*: II. Cytoplasmic Ribonucleic Acids in Normal and Pathologic Glandular Epithelium. W. B. Atkinson, E. T. Engle, S. B. Gusberg and C. L. Buxton.—p. 132.
*Thermal Irritation in Gastric Disease.* R. E. *Davis* and A. C. Ivy. —p. 138.
Extramammary Paget's Disease of Perianal Skin. A. G. Foraker and C. J. Miller.—p. 144.

**Nitrogen Mustards in Leukemia.**—Burchenal and co-workers report their experiences with methyl-bis (beta-chlorethyl) amine ($HN_2$) or with the tris compound ($HN_3$) in the treatment of 38 cases of leukemia. They review 89 cases that have been reported in the literature. The authors also made clinical studies with four other nitrogen mustards, SK 136, SK 137, SK 437 and SK 596. With the possible exception of SK 136 none of these nitrogen mustards had any advantages over $HN_2$. In 54 of the total of 127 cases (38 of their own and 89 from the literature), the disease was chronic myelocytic, in 45 chronic lymphocytic and in 28 acute leukemia. Occasional cases of chronic myelocytic leukemia have responded poorly to some other form of therapy and then responded well to $HN_2$ or SK 136. This is probably due not to a better inherent chemotherapeutic activity of the nitrogen mustards, but rather to the fact that the previously used agent was not, or could not, be pressed to full therapeutic effect, or, as occasionally happens with roentgen therapy, was not localized on the most important focus of the disease. Conversely, some cases responded better to a course of irradiation than to $HN_2$, and it is quite possible that some may also react better to urethane or arsenic. Most patients will probably respond about as well to any of the standard methods of therapy, but patients with disease refractory to one standard technic should be treated by another. The role of the nitrogen mustards in the treatment of chronic lymphocytic leukemia is less clearcut. The responses were much less regular and predictable than in the chronic myelocytic form of the disease. No real beneficial effect can be expected from $HN_2$ or SK 136 in the acute leukemias. In the final analysis, the nitrogen mustards $NH_2$, $NH_3$ and SK 136 are useful adjuncts to the treatment of leukemia, and approximately equal to arsenic, benzene, urethane, radiophosphorus and irradiation. In certain cases, however, there are definite advantages to the use of this method of chemotherapy.

**Cutaneous Nevi and Melanomas.**—Allen applies the term nevus only to the pigmented or nonpigmented lesions composed of melanoblasts, that is, dopa-positive cells containing the enzyme melanogenase. The term is not used in the dermatologic sense of any congenital blemish such as a "vascular nevus" or "sebaceous nevus." The unqualified term melanoma has come to be used interchangeably with malignant melanoma. The nevi include the following: (1) junctional nevus (dermoepidermal nevus or marginal nevus), (2) intradermal nevus (common mole or neuronevus), (3) blue nevus (Jadassohn-Tièche nevus), (4) compound nevus and (5) juvenile melanoma. The junctional nevus is derived from true epidermal cells. The cutaneous malignant melanomas arise from junctional nevi. Hence, malignant melanomas are epidermogenic and should be categorized as carcinomas for this reason rather than for reasons attributed to so-called neuroectodermal derivation. The junctional nevus as well as the seemingly anaplastic juvenile melanoma rarely are cancerous before puberty. In adults, about 12 per cent of the intradermal nevi are compounded with junctional nevi. The term "compound nevus" is suggested for such lesions. Evidence contradicts the impression that malignant melanomas arise from the common moles (intradermal nevi). When, as occurs in a minority of instances, a common mole is associated with a melanocarcinoma, the latter may be assumed to have grown from the overlying epidermal or junctional element of the compound nevus rather than from the intradermal nevus. The blue nevus and the mongolian spot are not epidermogenic but are most likely neurogenic. Because it may be assumed that nevi of the scrotum and of the palmar and plantar aspects of the extremities are junctional nevi, it would seem wise to remove such nevi prophylactically, preferably prior to puberty. The evaluation of the crucial transition from junctional nevus to malignant melanoma may require an extreme nicety of judgment. Criteria for this transformation in early or small lesions are described. Metastatic melanomas to the skin do not provoke the junctional change, and the absence of such change may be used reliably to differentiate a primary from a metastatic melanoma. Junctional nevi and small melanomas of the nipple of the breast may be easily confused histologically with Paget's disease. Similarly, many cases of so-called extramammary Paget's disease are in reality junctional nevi or melanomas.

## Georgia Medical Association Journal, Atlanta

**38**:45-88 (Feb.) 1949

Congenital Metatarsus Varus. J. H. Kite.—p. 45.
Rehabilitation of Hand. A. M. Pruce.—p. 49.
Acute Acquired Hemolytic Anemia, Idiopathic Type: Report of Case in Negro. C. H. Carter, E. S. Armstrong and V. P. Sydenstricker. —p. 52.
Anemia in Labor. B. Traylor and R. Torpin.—p. 60.
Postpartum Hemorrhage. M. T. Benson Jr.—p. 69.
Cancer News. J. C. Norris.—p. 74.
New National Health Bill. E. H. Greene.—p. 75.

## Illinois Medical Journal, Chicago

**95**:125-196 (March) 1949

*Treatment of Pneumonia by Single Injection Daily of Potassium Penicillin in Beeswax Peanut Oil Mixture. I. F. Volini, W. S. Hoffman and J. J. Hughes.—p. 147.
*Streptomycin and Penicillin in Febrile Obstetric and Gynecologic Conditions. H. C. Hesseltine.—p. 156.
Subarachnoid Hemorrhage. H. C. Voris.—p. 160.
Acute Intrapartum Inversion of Uterus. H. L. Allen, F. A. Morrison and F. C. Atwell.—p. 167.
Constrictive Calcified Pericarditis in Diabetic: Case Reports. E. Bruch and T. Lang.—p. 173.

**Treatment of Pneumonia.**—The efficacy of potassium penicillin G in a suspension of peanut oil with a dispersion of beeswax was investigated by Volini and his associates in the treatment of 104 patients with pneumonia who were admitted to the Cook County Hospital. The patients were given once daily an intramuscular injection of 1 cc. of a mixture containing 300,000 Oxford units of penicillin. The clinical response was good; the temperatures of over 60 per cent of the patients returned to normal within seventy-two hours. In many of the patients the levels of penicillin concentration were determined at intervals following injection, and it was found that they were more than adequate to effectively combat organisms causing pneumonia. There were no significant toxic reactions. The mortality rate was 3.8 per cent, but in all of the patients who died complications existed, so that pneumonia was not necessarily the chief cause of death. Complications and concurrent diseases existed in 32.7 per cent of the patients. The authors feel that patients who do not respond to treatment within seventy-two hours should be reinvestigated.

**Streptomycin and Penicillin in Gynecologic Conditions.**—Hesseltine presents in a table the therapeutic values of penicillin and streptomycin against organisms usually encountered in obstetric and gynecologic conditions. He stresses the importance of complete bacteriologic examination, not only to determine the offending organism, but also to ascertain its susceptibility to penicillin and streptomycin as a guide to therapy. Cultures should be obtained from the uterine cavity as well as the blood stream. The author and an associate made a special study on the prophylactic use of penicillin and streptomycin in patients in long labor, those treated by Dührssen's incision, intrauterine pack and other treatments commonly followed by a febrile course. They stress that streptomycin and penicillin are extremely valuable therapeutic aids in obstetrics and gynecology. Sufficient amounts must be given over an appropriate period of time. The parenteral route is the only acceptable one in obstetric and gynecologic complications. Other therapies such as blood transfusions, fluids, relief of bowel distention, drainage of abscesses and other routines must not be neglected. The author states that the antibiotics do not extend obstetric and gynecologic conditions for major surgery beyond the present accepted standards.

## Journal of the American Dental Association, Chicago

**38**:293-416 (March) 1949. **Partial Index**

*Survey of Dental Diseases as Diagnostic Aid in Rheumatic Fever. M. Entine.—p. 303.
Value of Hot Oil as Means of Disinfecting Instruments. H .T. Knighton.—p. 309.
The Dentist in the Hospital Team: Scientific Opportunities in Hospital Dentistry. E. M. Bluestone.—p. 316.

**Dental Diseases in Rheumatic Fevr.**—Entine observed that many patients with rampant dental caries have had rheumatic fever. A survey was instituted to ascertain whether the relation was accidental or whether rampant dental caries and heavy mucin deposits can be classified as symptoms or sequelae of the disease. The survey included 100 children with rheumatic fever and 100 normal children. The children with rheumatic fever were studied at outpatient and rheumatic fever clinics. The ages of the children varied between 4 and 17 years; the average was 9.5 years for the normal children and 10.3 years for those with rheumatic fever. The CRE index was determined in both groups of children. C indicates the number of carious penetrations of the enamel; R, the number of restorations, and E, the number of teeth previously extracted because of caries, plus the number of extractions necessary. The CRE index for normal children between the ages of 4 and 17 is 8.1. The CRE index for children with rheumatic fever, of the same age and socio-economic level, is 13.2. This represents approximately 60 per cent more dental caries in rheumatic fever patients than in normal children. This seems to indicate a relation between the streptococci associated with rheumatic fever and the greatly increased amount of streptococcic activity in the teeth as evidenced by caries. There is reason to suspect that in some cases a peculiar orange-brown mucin-like deposit around the necks of the teeth and on the occlusal surfaces is a symptom of rheumatic fever. In 33 per cent of the rheumatic fever patients nonsuppurative gingivitis is present.

## Journal of Clin. Endocrinology, Springfield, Ill.

### 9:113-210 (Feb.) 1949

Testis-Pituitary Interrelationship: Relative Inability of Testosterone to Reduce Urinary Gonadotropin in Eunuchoid Men. E. P. McCullagh and F. J. Hruby.—p. 113.
Treatment of Acromegaly. L. M. Hurxthal, H. F. Hare, G. Horrax and J. L. Poppen.—p. 126.
Mechanism of Secretion of Thyroid Hormone. C. P. Leblond and J. Gross.—p. 149.
*Width of Adrenal Cortex in Lymphatic Leukemia, Lymphosarcoma* and Hyperthyroidism. P. M. LeCompte.—p. 158.
Spermatogenesis Following Administration of Androgen and Gonadotropin in Case of Eunuchoidism: Coincidental Neoplasm During Therapy. R. M. Perlman.—p. 163.
Radioiodine in Study and Treatment of Thyroid Disease: Review. M. P. Kelsey, S. F. Haines and F. R. Keating Jr.—p. 171.

## Journal of International College of Surgeons, Chicago

### 12:103-206 (March-April) 1949

Technic of Parotidectomy. H. Bailey.—p. 103.
*Sympathetic Conduction Pathways Independent of Sympathetic Trunks—Their Surgical Implications. W. F. Alexander, A. Kuntz, W. P. Henderson and E. Ehrlich.—p. 111.
Two Stage Pharyngo-Esophageal Diverticulectomy: Indications and Technic. R. W. McNealy and J. A. Glassman.—p. 120.
*Labyrinthine Surgery for Ménière's Disease. J. R. Lindsay.—p. 127.
Total Gastrectomy in Carcinoma of Stomach. E. J. Halligan, L. L. Perkel and J. K. Catlaw.—p. 134.
The Preoperative and Postoperative Care of Carcinoma of Rectum and Pelvic Colon. J. P. Fleming.—p. 142.
Cystic Omental Bursa: Pseudopancreatic Cyst. S. A. Zieman.—p. 150.
Surgical Correction of Senescent Pendulous Cheeks. A. M. Brown.—p. 154.
Pentothal Sodium Anesthesia in Major Surgery: Application, Administration, Dosage. D. L. Rater.—p. 161.
Urinary Bladder Obstructions in Children. J. F. McCahey.—p. 170.
New Operation for Prolapsed Uterus and Modification of Montgomery's and Simpson's Operation for Retroversion. L. L. Lapi.—p. 177.
Intramedullary Nailing of Skeleton. A. González García.—p. 185.

**Sympathetic Conduction Pathways.**—Dissections of the sympathetic trunks and the communicating rami, carried out by Alexander and co-workers on human cadavers, and microscopic examination of sections of communicating rami and of spinal nerves revealed that aggregates of sympathetic ganglion cells lie imbedded in ventral spinal nerve roots and adjacent to nerve roots at the sites of origin of white communicating rami. These ganglion cells are synaptically connected with preganglionic fibers which reach them directly via the ventral nerve root. Most of them in turn send their axons distalward in the nerve trunk. In this manner sympathetic conduction pathways are formed which do not traverse the sympathetic trunk. They are not interrupted by sympathetic trunk extirpation or by section of the white communicating rami. Ganglions in the ventral nerve root or located adjacent to the root have been observed mainly in the first and the second thoracic and the first and the second lumbar segments. Because of connecting rami between the upper thoracic nerves and between the eleventh thoracic to the third lumbar nerves, the distribution of the sympathetic conduction pathways which are independent of the sympathetic trunk is not limited to the segments in which the ganglion cells concerned are located. These observations afford a more satisfactory explanation than formerly has been possible for failures to achieve complete sympathetic denervation by sympathectomy. Resection of the ventral roots of the second and the third thoracic nerves, in conjunction with resection of the white communicating ramus of the first thoracic nerve and interruption of the sympathetic trunk below its connections with the third thoracic nerve, probably would insure complete sympathetic denervation of the upper extremity in some cases. Resection of the ventral roots of the first and the second lumbar nerves, in conjunction with extirpation of the sympathetic trunk from the eleventh thoracic to the third lumbar segments, probably would insure complete sympathetic denervation of the lower extremity. In order to achieve permanent sympathetic denervation measures to prevent regeneration of the interrupted ventral root fibers would be necessary.

**Labyrinthine Surgery for Ménière's Disease.**—Lindsay, in a search for a method to prevent vertigo while preserving cochlear function, carried out several procedures on the labyrinth of 4 patients, 3 men and 1 woman between the ages of 32 and 55, with intractable Ménière's disease. Results showed that decompression of perilymph is of no value as a relief to Ménière's disease, or hydrops of the labyrinth. A fistula made in a bony semicircular canal through a simple mastoidectomy approach and left uncovered will probably remain a permanently open fenestra, which is undesirable because of the associated fistula symptom and Tullio phenomenon. Also a fenestra covered only by mucosa might offer less resistance to infection in case of subsequent middle ear suppuration. Closure of fistula can be assured at operation by making a very small opening and leaving bone chips in it, and probably by destruction or removal of the membranous labyrinth. The depression of the hearing threshold to a state of profound deafness in all four ears operated on, including that in which only a simple fenestra was created, suggests that the existence of a third window in the labyrinth in the presence of an intact conducting mechanism results in a definite threshold loss. Whether such a hearing loss in the first 3 patients would have been avoided by causing the fistulas to close, thereby limiting the procedure to the intralabyrinthine injury, has not yet been determined. The vertigo was relieved in all 4 patients.

## Journal of Investigative Dermatology, Baltimore

### 12:81-144 (Feb.) 1949. Partial Index

Fixed Eruption Due to Bromides. J. A. Tolmach and S. B. Frank.—p. 81.
"L. E." Cell in Blood in Acute Disseminated Lupus Erythematosus. R. Dorothy Sundberg and Norma B. Lick.—p. 83.
*Streptomycin Therapy of Chronic Granuloma Inguinale. M. H. Samitz, P. N. Horvath, P. P. Mori and H. Beerman.—p. 85.
Rough-Smooth Variation in Blastomyces Dermatitidis Gilchrist and Stokes 1898. E. D. DeLamater.—p. 101.
Serum Concentrations Following Five Treatment Schedules with Procaine Penicillin in Oil with Aluminum Monostearate. D. K. Kitchen, E. W. Thomas and C. R. Rein.—p. 111.
Preliminary Evaluations of Some New Synthetic Organic Compounds as Scabicides. G. W. Eddy.—p. 117.
Observations on Fluorescent Material in Hairs Infected by Microsporon in Tinea Capitis. Z. Felsher.—p. 139.

**Streptomycin in Chronic Granuloma Inguinale.**—Nineteen cases of granuloma inguinale were treated by Samitz and his co-workers with a uniform total dosage of 20 Gm. of streptomycin administered in fractions of 0.5 Gm. every three hours for five days. All patients responded with rapid healing, and there were no recurrences during an observation period of six to fifteen months. There was one recurrence within three months among 4 patients treated with a total of 10 Gm. of streptomycin. There were no significant toxic reactions to the streptomycin treatment.

## Medical Annals of District of Columbia, Washington

### 18:1-58 (Jan.) 1949

Trends in Medical Education. W. S. McCann.—p. 1.
Newer Concepts of Infant Feeding. W. F. Burdick.—p. 6.
Newer Developments in Allergic Eczematous Dermatitis. R. L. Baer.—p. 13.
Joseph Goldberger and the Mysterious Hunger. E. Podolsky.—p. 17.

### 18:59-112 (Feb.) 1949

What is Good Medical Service? I. Galdston.—p. 59.
Progress in Virus Controls. C. Armstrong.—p. 64.
Consideration of Some Aspects of Allergy Affecting Respiratory Tract. H. S. Bernton.—p. 68.
Immediate Treatment of Common Fractures. C. L. Hall.—p. 73.
Medical Misconceptions. J. A. Gannon.—p. 78.

## Plastic and Reconstructive Surgery, Baltimore

4:1-122 (Jan.) 1949

Method of Cutting and Suturing Lip in Treatment of Complete Unilateral Clefts. A. B. LeMesurier.—p. 1.
Mammaplasty for Pendulous Breasts: Empiric and Geometric Planning. G. Aufricht.—p. 13.
Internal Wire-Pin Immobilization of Jaw Fractures. J. B. Brown, M. P. Fryer and F. McDowell.—p. 30.
Immediate Reconstruction of Lower Jaw Following Surgical Excision of Large Tumors. H. Marino, N. B. Turco and M. Craviotto.—p. 36.
*Transfer of Metacarpal, With or Without Its Digit, for Improving Function of Crippled Hand. G. L. Hyroop.—p. 45.
Surgical Repair of Nasal Deformities. F. Young.—p. 59.
Plastic Surgery Problems in Texas City Disaster. J. H. Hendrix, T. G. Blocker and Virginia Blocker.—p. 92.
Columella and Nasal Tip Reconstruction Using Multiple Composite Free Grafts: Report of 2 Cases. D. D. Pelliciari.—p. 98.
One-Stage Ear Lobe Reconstruction. S. K. Wynn.—p. 105.
Klippel-Feil Syndrome: Review of Literature and Report of Case. M. Gonzalez Ulloa and T. F. Gonda.—p. 109.

**Transfer of Metacarpal to Improve Function of Crippled Hand.**—Metacarpal transfer as described by Hyroop implies the transfer of a metacarpal with or without the attached digit, its tendons, nerves and vascular supply. In loss of the thumb with loss of the distal two thirds of the first metacarpal, with a good carpometacarpal joint, transfer of the index finger with the second metacarpal, with skin, blood vessels, nerves and tendons, will give an ideal result if all the muscles and tendons are present in the stump of the amputated thumb. Where the thumb with all of the first metacarpal is lost, the second metacarpal with the index finger may be transferred to the greater multangular carpus. Where there is amputation of the thumb with the first metacarpal and the index finger at the proximal joint, the second metacarpal may be transferred, with the palmar tissue, nerves and blood vessels, for a thumb. Where the thumb and index finger with their metacarpals are lost, the third metacarpal, with the long finger, may be transferred to make a thumb. Loss of the thumb and index finger with their metacarpals and amputation of the long finger at the proximal joint may indicate transfer of the third metacarpal, with palmar tissue, nerves and blood vessels. Where there is loss of the long finger with the head or all of the third metacarpal, transfer of the second metacarpal with the index finger, with or without bone graft, gives a good compact hand with normal function. Where there is amputation of the ring finger with the head or all of the fourth metacarpal, transfer of the little finger, with the fifth metacarpal, to the base of the fourth gives the same results as in the case of amputation of the long finger. The author stresses that these and other metacarpal transfer operations give the patient a hand that is ready for use in a short time. It has the advantage of carrying with it its own nerve and vascular supply. The special sensations of the hand, along with stereognosis, are retained.

## Proc. of Staff Meet. of Mayo Clinic, Rochester, Minn.

24:133-148 (March 16) 1949

Effect of Combined Treatment with Aureomycin and Dihydrostreptomycin on Brucella Infections in Mice. F. R. Heilman.—p. 133.
*Combined Use of Aureomycin and Dihydrostreptomycin in Treatment of Brucellosis. W. E. Herrell and T. E. Barber.—p. 138.
Chronic Glomerulonephritis Complicating Pregnancy. M. Elizabeth Mussey.—p. 145.

**Aureomycin and Dihydrostreptomycin in Brucellosis.**—Herrell and Barber describe a new approach to the treatment of brucellosis in human beings, namely, the combined use of aureomycin and dihydrostreptomycin. It is not suggested that this is a specific form of treatment for brucellosis, but to date it appears to be the most effective method and, at the same time, the method which probably causes the least inconvenience to the patient and with which the lowest incidence of toxicity is associated when compared with previously available methods. The recommended plan of treatment consists of the administration of approximately 3 Gm. of aureomycin per day by the oral route combined with the simultaneous administration of 2 Gm. of dihydrostreptomycin per day by the intramuscular route. For acute brucellosis the average course of treatment should be twelve to fourteen days. In the treatment of culturally proved brucellosis with localizing lesions (brucellosis with complications) the course probably should be extended to twenty-one to twenty-eight days.

## Surgery, St. Louis

25:169-328 (Feb.) 1949

Determining Factors in Safety and Success of Present Day Radical Surgery. A. O. Whipple.—p. 169.
*Angiocardiography in Differential Diagnosis of Pulmonary Neoplasms. H. Neuhof, M. L. Sussman and R. A. Nabatoff.—p. 178.
Experimental Production of Gradual Occlusion of Large Arteries with Polythene and Tantalum. F. W. Cooper Jr., R. L. Robertson, P. C. Shea Jr. and E. W. Dennis.—p. 184.
Vasomotor Changes in Peripheral Nerve Injuries. C. A. R. Schulenburg.—p. 191.
*Importance of Exploratory Thoracotomy in Diagnosis of Certain Pulmonary Lesions. C. R. Johnson, O. T. Clagett and C. A. Good. —p. 218.
Epiphrenic Esophageal Diverticulum Associated with Cardiospasm: Report of Successful Diverticulogastric Anastomosis. J. K. Poppe and R. Berg.—p. 231.
Cholecystitis Emphysematosa. E. E. Jemerin.—p. 237.
Volvulus of Cecum: Appeal for Primary Resection, with Report of 6 Cases. E. Melchior.—p. 251.
Prevention of Abdominal Adhesions: Experimental Study on Role of Gastrointestinal Motility. C. A. Schiff, S. L. Goldberg and H. Necheles.—p. 257.
Some Psychosomatic Aspects of Management of Surgical Patients. M. Lipkin and E. Joseph.—p. 268.
Plastic Surgery in Mammoth Breasts. E. S. Lamont.—p. 276.
Effect of Ultraviolet Radiation and Air Conditioning on Air Sterility in Closed Surgery. J. M. Goodman, Mary B. Cass, K. P. Klassen and G. M. Curtis.—p. 284.
Comparison of Solid and Liquid Soap as Vehicle for G-11 (Hexachlorophene) in Surgical Wash. C. V. Seastone and T. C. Erickson. —p. 290.

**Angiocardiography in Differential Diagnosis of Pulmonary Neoplasms.**—Neuhof and collaborators point out that Robb and Steinberg in 1938 presented observations concerning the role of angiocardiography in the interpretation of a variety of intrathoracic lesions. They noted changes in the branches of the pulmonary artery in tuberculosis and bronchiectasis, obstruction of the innominate vein by substernal goiter, and displacement of the great venous channels by mediastinal tumors or widespread fibrosing pulmonary lesions. Neuhof and associates used the Robb and Steinberg procedure with the addition of a multiple roentgen exposure technic. They aimed to ascertain the effects of various pulmonary neoplasms on the pattern of the pulmonary artery and its branches. The interpretation of the alteration has been materially aided by comparison with the films of operative specimens in which the pulmonary artery was injected with a radiopaque material. It was found that malignant lesions of the main bronchus often involve major branches of the pulmonary artery, causing compression, irregular distortion and varying degrees of obstruction. In those cases in which the infiltrating lesion arises from a small bronchus, similar changes involving smaller branches of the pulmonary artery are seen. In well circumscribed tumors, the adjacent vessels are spread apart and encircle the lesion. Mediastinal and pleural lesions cause no significant changes in the angiograms.

**Exploratory Thoracotomy in Diagnosis of Pulmonary Lesions.**—Johnson and his associates recently reviewed the records of 384 patients operated on by Clagett at the Mayo Clinic during the period 1942 to 1947 for lesions involving the lungs primarily. On the basis of the clinical records, laboratory findings and other diagnostic aids short of exploratory thoracotomy, a diagnosis could be made in 270 of these patients. In the remaining 114, it was necessary to resort to exploratory thoracotomy before a definite diagnosis could be established. On the basis of bronchoscopic and roentgenographic findings, these 114 cases were divided into three groups. The first group included all cases in which there was a mass lesion in the lung peripheral to the field of bronchoscopic visualization. In the second group were placed those cases in which the lesion was represented primarily by changes secondary to bronchial obstruction. Patients with lesions which could not be placed in either the first or second group were placed in a third or miscellaneous group. Thirty-nine of fifty-three mass lesions were proved to be malignant. Indications for removal existed in the majority of the benign lesions. The authors feel that the presence of a mass lesion of an indeterminate nature is an indication for exploratory thoracotomy. A malignant growth was detected at operation in 24 of the 48 cases in which the bronchoscopic and roentgenographic evidence was only that of bronchial obstruction. It had been impossible to make a positive diagnosis preoperatively. The 10 patients of the miscellaneous group were submitted to thoracotomy because the lesion failed to subside after a period of observation. Three of the 114 indeterminate pulmonary lesions remained indeterminate after exploratory thoracotomy. There were no deaths among the 25 patients who underwent exploration only. Six deaths followed pneumonectomy and 2 followed lobectomy. Exploratory thoracotomy is a valuable diagnostic measure.

## Western J. Surg., Obst. & Gynecology, Portland, Ore.

**57**:45-98 (Feb.) 1949

Training for Surgical Career. A. H. Peacock.—p. 45.
*Respiratory Emergencies in the Newborn. W. F. Goff.—p. 49.
Cancer of Rectum and Colon. H. E. Bacon and H. D. Trimpi.—p. 58.
Response of Germ Cells to Gonadotropic Hormones in X-Ray Injured Ovaries of Young White Mice. J. M. Essenberg.—p. 61.
Comparative Therapeutic Effects of Dextro and Racemic Amphetamine Sulfate. S. C. Freed.—p. 67.
*Use of Peritoneal Drainage in Abdominal Operations. E. M. Baker. —p. 71.
Unusually Large Amounts of Pitocin for Induction of Labor. R. R. Gratton.—p. 84.
Polyethylene Tubing for Continuous Spinal Anesthesia. A. C. Kirchhof and D. C. Boals.—p. 88.
Preservation of Internal as Well as External Anal Sphincter Following Resection of Rectum for Carcinoma: Case Report. R. R. DeNicola. —p. 91.

**Respiratory Emergencies in the Newborn.**—Goff advises a direct laryngoscopy for every newborn infant who fails to start respiration promptly or who shows signs of respiratory distress. Three posteroanterior roentgenograms of the chest should be taken in the cyanotic newborn infant. These will aid in the differential diagnosis of pulmonary, cardiac and cerebral pathologic conditions. Goff mentions congenital laryngeal stridor, abductor paralysis and membranous paralysis as laryngeal emergencies in the newborn. Congenital laryngeal stridor is a symptom rather than a disease, which is frequently due to a flabby larynx in which the false cords and arytenoids fall into the glottis on inspiration. In most cases the child will outgrow the weakness in a year. A congenital web between the cords requires incision with subsequent dilatation. Laryngomalacia, an anomaly in which both sides of the epiglottis curl in, needs only observation. A baby with complete stenosis of the larynx may pass as stillborn but would respond to immediate intubation or tracheotomy. The author discusses acute respiratory distress due to structural or pathologic changes in the lungs, such as atelectasis, pneumothorax, tracheoesophageal fistula, diaphragmatic hernia, thymus enlargement and lung cyst. Atelectasis is by far the commonest of the chest emergencies of the newborn. In the Swedish Hospital 157 cases of congenital atelectasis were observed among a total of 13,515 live births. Of the 95 premature infants with atelectasis 90 died, and of the 62 full term infants 30 died. The author makes a distinction between atelectasis due to an unexpanded, unaerated lung, and that due to bronchial obstruction from retained or aspirated secretions. In the latter case, tracheal or bronchoscopic aspiration is of value. In the unexpanded lung, special emphasis should be given to the early, gentle toilet of the respiratory passages, followed by the administration of oxygen and the maintenance of external heat. The pulmotor positive-negative resuscitator machines have killed more newborn infants than all other types of treatment combined. The author feels that most hospitals are not adequately equipped to resuscitate newborn infants. He has assembled an emergency outfit especially for use in the delivery room.

**Peritoneal Drainage in Abdominal Operations.**—Baker shows that diametrically opposed views have been expressed with regard to drainage, some advising "when in doubt drain" and others "when in doubt do not drain." He undertook a survey of certain groups of cases in an attempt to learn more concerning the advantages and the dangers of intraperitoneal drainage. He stresses the following points: 1. Except for the control of bleeding, there seems to be little value in the incorporation of gauze in abdominal drains. 2. Adhesions by fibrin completely isolate a drained point from the remaining cavity in a limited number of hours. 3. The practice of draining low points of the abdomen for injured areas higher up is unsound. 4. There are no means of measuring a person's susceptibility to bacterial organisms. 5. There are three indications for the use of drains in the abdominal cavity: first, to control bleeding; second, to provide an outlet for a localized infection and thus to prevent abscesses; and third, to produce a sinus tract through which substances may escape from a walled-off area within the abdomen without soiling the general peritoneal surfaces. 6. No fixed rule can be made to govern the use of peritoneal drainage; the problem is an individual one. 7. It is safest to follow the old dictum of Lawson Tait—"when in doubt drain." 8. Abdominal drainage involves an accurate knowledge of the physiology of the peritoneum. 9. The surgeon can obtain good results only as long as his operative maneuvers are in accord with the natural physiologic course of peritoneal response to disease.

## Yale Journal of Biology and Medicine, New Haven

**21**:181-262 (Jan.) 1949

*Probable Mechanism of Streptomycin Action in Tuberculosis. H. J. Corper and M. L. Cohn.—p. 181.
Study of Absorption of Fat and Carotene from Gastro-Intestinal Tract. D. W. Molander.—p. 201.
*Immunization of Troops with Typhus Vaccine and Characteristics of Typhus in Immunized Individuals. J. F. Sadusk Jr.—p. 211.
Relationship Between pH Tolerance, Virulence, and Proteolytic Enzymes in Bacteria: I. Bacillus Anthracis. J. M. Leise.—p. 233.
Failure of Estrogen to Induce Changes in Sex Skin of Male Chimpanzee. G. Clark.—p. 245.
Millivoltmeters. H. S. Burr and A. Mauro.—p. 249.
Influence of Hormones from Adrenal Cortex on Dermal Spread of India Ink With and Without Hyaluronidase: Preliminary Report. Jeanette C. Opsahl.—p. 255.

**Streptomycin in Tuberculosis.**—A series of controlled in vitro and in vivo tests with tubercle bacilli in various mediums as well as controlled tests performed by Corper and Cohn in guinea pigs showed that streptomycin in vitro in amounts up to 1,000 units per cubic centimeter possesses no tuberculocidal action within one month of contact at 37 C. Streptomycin is not adsorbed or absorbed in active form by mammalian tubercle bacilli or by egg white or egg yolk in which it is not destroyed by heat coagulation of these materials. Streptomycin in vitro appears to act only during its presence in nutrient mediums, which does not explain the sustained retardant action in vivo on tuberculosis. Streptomycin exerts no appreciable discernible effect on the viability of virulent human tubercle bacilli in vivo, but it retards skin tuberculosis produced by the intracutaneous injection of virulent human tubercle bacilli as well as that produced by avirulent human tubercle bacilli. Treatment with streptomycin exerts a definite effect on the splenomegaly produced in guinea pigs by virulent or avirulent human tubercle bacilli. The drug did not appear to be able to prevent the natural development of specific tuberculoimmunity, specific tuberculoallergy or bacillary allergic intoxication. The action of the drug does not appear to be interfered with by loading the reticuloendothelial system with india ink or avirulent tubercle bacilli. In retarding tuberculosis, streptomycin does not appear to prevent a lethal effect from the intravenous infection with virulent human tubercle bacilli, in spite of the absence of macroscopically discernible tuberculosis in sufficient amount to account for death; resistance of the tubercle bacilli to the drug may play a part in this phenomenon. There is a likelihood that streptomycin does not act on tubercle bacilli per se in vivo as retardant to their growth as it does in vitro by direct contact, but that some intermediate mechanism accounts for its action on tuberculosis and consequently on tubercle formation.

**Typhus Vaccine Immunization.**—According to Sadusk, 64 cases of epidemic, louse-borne typhus were reported from the entire United States Army for the period 1942 to 1946; 603 cases of murine (endemic) typhus and 6,685 cases of scrub typhus (tsutsugamushi disease) were reported for the same period. There were no deaths among the 64 patients with epidemic typhus, who had been immunized with the epidemic typhus vaccine used by the United States Army. The vaccine consisted of a 10 per cent yolk sac suspension of the Breinl strain of Rickettsia prowazeki extracted with ether, containing both rickettsial bodies and "soluble antigen." Since early 1942 and throughout the war years three injections of typhus vaccine, 1.0 cc. each, were administered subcutaneously at an interval of 7 to 10 days, with stimulating doses every six months in endemic areas. Since 1944 the initial immunization series was reduced from three to two doses of vaccine. While no definite conclusions may be reached concerning reduction in incidence of epidemic typhus with this vaccine, the following points may be made: (1) evidence is accumulating to suggest that such incidence may be definitely lowered by adequate prophylactic immunization; (2) vaccination serves greatly to modify the clinical course of the disease if it occurs in adequately vaccinated persons; fever is much lower and of shorter duration than in persons not vaccinated, the period of hospitalization is markedly reduced, the extent and duration of rash are diminished, circulatory and nervous symptoms are lessened and the incidence of complications is brought down to a low figure; (3) the chance of death from epidemic typhus is practically nil if a person has been adequately immunized at least two weeks prior to exposure. The serologic findings in 5 of the 64 patients with epidemic typhus occurring subsequent to prophylactic immunization revealed that complement-fixing antibodies for epidemic typhus persisted for prolonged periods, while the Weil-Felix reaction and the reaction to the specific rickettsial agglutination test became negative in late convalescence. In all 5 cases it was highly probable that infection was sustained by pulmonary inhalation or conjunctival absorption of dust containing infected louse feces.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. *Single case reports and trials of new drugs are usually omitted.*

### Annals of Rheumatic Diseases, London

**8:**1-88 (March) 1949

Variant of Rheumatoid Arthritis Characterized by Recurrent Digital Pad Nodules and Palmar Fasciitis, Closely Resembling Palindromic Rheumatism. E. G. L. Bywaters.—p. 1.
*Metabolism of Hyaluronic Acid in Relation to Rheumatic Diseases. H. Cohen.—p. 31.
Synovial Fluid Mucin. C. Rimington.—p. 34.
Histopathology of Intrinsic Muscles of Hand in Rheumatoid Arthritis: Clinico-Pathologic Study. O. C. Kestler.—p. 42.
Clinical Significance and Treatment of Lesions of Intervertebral Disk. N. Capener.—p. 59.
Treatment of So-Called Palindromic Rheumatism with Gold Compounds. E. W. Boland and N. E. Headley.—p. 64.
Rheumatoid Arthritis and Psoriasis: Statistical Statements. K. Wassmann.—p. 70.
Rheumatological Hand and Finger Symptoms. E. Jonsson.—p. 72.

**Hyaluronic Acid and Rheumatic Disease.**—Cohen discusses the role of hyaluronic acid and the enzyme hyaluronidase in the causation of the phenomena of rheumatic diseases. It was believed previously that there is no common specific cause for the rheumatic disorders but that they have two common features, namely, the site of attack and the structural changes they exhibit. The site of the rheumatic lesion is in the skeletal tissues of mesenchymal origin, viz., connective tissue, fascia, muscle, ligament, joint capsule, synovial membrane, articular cartilage and even bone. Connective tissue consists essentially of collagen fibrils and of the interfibrillar ground substance or cement. Chemical studies have shown that among the constituents of this ground substance are chondroitin sulfuric acid and hyaluronic acid and that both of these can be acted on by the enzyme hyaluronidase. It appears that when the enzyme hyaluronidase attacks hyaluronic acid and other ground substances of connective tissue there occurs a series of changes analogous to those seen in rheumatic diseases. It has not been definitely established that a direct association exists between hyaluronic acid metabolism and rheumatism. The evidence is, however, suggestive, and a fruitful field of study has been revealed which merits further exploration.

### Brain, London

**71:**343-482 (Dec.) 1948

Olivo-ponto-cerebellar Atrophy. M. Critchley and J. G. Greenfield. —p. 343.
Subacute Inclusion Encephalitis (Dawson Type). W. R. Brain, J. G. Greenfield and Dorothy S. Russell.—p. 365.
Thrombosis of Intracranial Veins. D. Kendall.—p. 386.
Effect of Intracisternal Injection of Saline Solutions on Pressure of Cerebrospinal Fluid of Dog. T. H. B. Bedford.—p. 403.
Copper and Iron Content of Brain and Liver in Normal and in Hepato-lenticular Degeneration. J. N. Cumings.—p. 410.
Possible Relationship Between Hereditary Ataxia and Peroneal Muscular Atrophy; with Critical Review of Problems of "Intermediate Forms" in Degenerative Disorders of Central Nervous System. M. Roth. —p. 416.
Lipidoses and Central Nervous System. A. Bird.—p. 434.
Sarcoidosis with Involvement of Nervous System. J. Colover.—p. 451.

### British Journal of Plastic Surgery, Edinburgh

**1:**217-292 (Jan.) 1949

Prefabricated Autogenous Ear Cartilages. H. E. Blake.—p. 220.
Treatment of Burns: Return to Basic Principles. A. B. Wallace. —p. 232.
Osteoporosis Following Burns. N. Owens.—p. 245.
Complications and Sequelae of Untreated Fractures of Facial Bones and Their Treatment. F. T. Moore and T. G. Ward.—p. 257.
Pressure Sores in Paraplegic Patients. R. Battle.—p. 268.
Operative Treatment of Abdominal Obesity, Especially Pendulous Abdomen. J. Foged.—p. 274.
*Some Observations on Curling's Ulcer. F. Braithwaite and P. H. Beales.—p. 284.

**Curling's Ulcer.**—According to Braithwaite and Beales ulceration of the duodenum following burns was first described by Curling in 1842. Harkins, in an extensive review of this condition in 1938, suggested that its incidence in severe burns was about 3.8 per cent, but the authors state that the incidence now is much lower. They ascribe this to modern methods of eliminating or reducing to a minimum bacterial infection of the burned areas. As early as 1894 it had been suggested that acute duodenal ulceration is associated with septic conditions as frequently as it is with burns and that the mechanism of production is the same in both cases. The authors report the histories of 2 patients with Curling's ulcer. They stress that Curling's ulcer is one of the late complications of burns. The lesion is found most commonly at the stage when the sloughs in third degree burns are separating; this is when tissue autolysis, exudation and infection are likely to be severest. The first of the patients cited had an extensive burn, covering approximately 65 per cent of his body. The ulcer was clinically evident eleven days after the injury. His treatment was adequate, but the extent of the burn was massive and infection with its resulting toxemia was inevitable. Forty per cent of his burn was third degree, with inevitable sloughs. The second patient shows that minimal sepsis may reactivate a dormant ulcer. In eight years, during which approximately 1,500 burns had been treated, only 3 examples of Curling's ulcer had been seen. This gives an incidence of 0.2 per cent. Some investigators have expressed the opinion that sepsis is the main feature in the production of Curling's ulcer. Penicillin is the most prominent recent factor in the control of sepsis. The introduction of penicillin has done much to diminish the incidence of Curling's ulcer. With modern treatment of burns aimed at prevention and control of infection and early skin grafting, this lesion will be encountered rarely, and then only in very extensive burns when the ideals of treatment are impossible to fulfil.

### Thorax, London

**4:**1-72 (March) 1949

Subphrenic Abscess. H. R. S. Harley.—p. 1.
Pneumoconiosis Due to Graphite Dust. S. R. Gloyne, G. Marshall and C. Hoyle.—p. 31.
Cardiac Myxoma. S. J. R. Macoun.—p. 39.
Pulmonary Complications of Dysphagia. J. R. Belcher.—p. 44.
*Ciliary Action. V. E. Negus.—p. 57.
Observations on Co-ordination of Diaphragmatic and Rib Movement in Respiration. H. Herxheimer.—p. 65.

**Ciliary Action.**—Negus stresses that persons dealing with respiratory diseases should never lose sight of the dependence on cilia in the physiologic processes of the nose and sinuses. He discusses the mode of action and the various functions of the cilia and emphasizes that to preserve ciliary action, and to assist its highly important function of resisting infection, it is necessary to take such measures in the prevention and treatment of disease as appear of assistance to physiologic processes. Thus the blanket of mucus must not be washed away by nasal douches, nor must it be made too viscid by concentrated glycerin or too liquid by excessive use of potassium iodide. The secretions must not be dried by hypertonic solutions, by excessive use of amphetamine or atropine or by residence in an inefficiently conditioned building. Secretions must not be allowed to accumulate in a sinus or bronchus. Except for brief periods no drugs must be employed which have a toxic effect on the mucosa; cocaine, thymol and most powerful antiseptics are in this category. Obstruction to ciliary streams must be cleared, whether a plug of coagulated mucopus in the ostium of the maxillary sinus, a foreign body or a mass of new growth in a bronchus. If an operation is performed in an area covered by ciliated epithelium, every care must be taken to avoid permanent damage. Adenoids must be removed in such a way as to avoid formation of scar tissue and to allow regeneration; in a sinus the opening must not be overly wide, nor should the mucosa be removed if capable of recovering. The reaction of the secretions must be regulated to facilitate free action; a $p_H$ just above neutral appears best, and for this reason spray solutions are made slightly alkaline. The alkali reserve of the body may require correction on occasion. If ciliary action maintains its efficiency, then there will be no penetration of the mucosa by bacteria.

## Acta Chirurgica Scandinavica, Stockholm

### 97:283-380 (Jan. 26) 1949. Partial Index

*Barge-Bourgain's Reaction in Genitourinary Tuberculosis. O. Sievers and Th. Berglin.—p. 283.
*Potassium Metabolism in Connection with Operations. N. Blixenkrone-Møller.—p. 300.
Retropubic Prevesical Prostatectomy. W. Mathisen.—p. 313.
Operative Treatment of Female "Stress" Incontinence. H. Wahren.—p. 331.
Perirenal Abscess. Ola Obrant.—p. 338.

**Barge-Bourgain's Reaction in Genitourinary Tuberculosis.**—Sievers injected centrifuged Besredka, Sauton and Dubos substrates after the growth of a pathogenic strain of Mycobacterium tuberculosis of human type into guinea pigs with tuberculous inguinal lymph nodes. He thus produced in the animals a positive reaction similar to the "allergic reaction" to human serum produced by Barge and Bourgain in tuberculous guinea pigs. Control animals were unaffected. The longer the bacteria had been allowed to grow in the substrates, the stronger was the reaction. In the injected substrates on which cultures of M. tuberculosis have been grown, there must exist products that arise in association with the growth of the bacteria. No evidence was produced to show that the substances in the injected substrates were identical with the substances which appeared in some of the human serum with which Barge and Bourgain produced a positive reaction in tuberculous guinea pigs, but the reactions in both cases exhibited similar pictures suggesting that the Barge-Bourgain reaction may be a specific one. Berglin's clinical trial of the Barge-Bourgain reaction showed that diagnosis of tuberculosis was doubtful in only 1 of 41 patients with a primarily positive Barge-Bourgain reaction. Twenty-two of the 41 patients had urogenital tuberculosis, and 9 had tuberculous epididymitis. The Barge-Bourgain reaction was negative in 17 control patients with nontuberculous disease of the urinary tract; it was negative likewise in 23 control patients with nonurogenital diseases. Barge-Bourgain's reaction may therefore be considered specific from a diagnostic point of view in diseases of suspected tuberculous nature, particularly in the urogenital organs, in epididymitis and in obscure hematuria. The relatively short time required for the reading of the reaction facilitates an early diagnosis of urogenital tuberculosis. The parallelism apparently existing between the reaction and the activity of the tuberculous process seems to be of certain value in determining the suitable time for surgical treatment, which should not be instituted when the reaction is still positive.

**Potassium Metabolism After Surgical Intervention.**—Blixenkrone-Møller determined the potassium excretion in the urine of 24 patients in good general condition, who had been on an ordinary diet, had not been dehydrated and had not had any disturbances of metabolism. The potassium excretion was on an average 1,700 mg. per twenty-four hours, varying from approximately 400 to 2,400 mg. The excretion was lowest at night, generally somewhat greater in the forenoon than in the afternoon. Determination of the potassium excretion in 8 patients who had undergone operations (4 gynecologic operations, 2 cholecystectomies, 1 tendon suture and 1 extirpation of a parotid tumor) without parenteral administration of fluid revealed that the potassium excretion was greatly increased during the twenty-four hours following operation, especially during the afternoon. This increase is due to cellular dehydration due to the negative water balance. The potassium excretion during the twenty-four hours following operation was only half as large in 5 patients who had undergone operation on the stomach, colon or biliary tract, to whom adequate amounts of fluid were administered parenterally; in none of these patients did the potassium excretion exceed that which might be assumed to originate from tissue breakdown. Routine administration of potassium after surgical treatment is not required if adequate amounts of fluid are given. In dehydrated patients addition of potassium to the intravenous fluid is indicated. One case of abdominoperineal amputation of the rectum is reported in which 9,806 mg. of potassium was excreted during the first four postoperative days. Ten grams of potassium in dextrose, water and sodium chloride had to be administered within the next six days, until postassium balance was attained.

## Acta Medica Scandinavica, Stockholm

### 132:201-302 (Dec. 31) 1948. Partial Index

Comparison of Oral and Intravenous Dextrose Tolerance Tests in Healthy Subjects. L. Goldberg and R. Luft.—p. 201.
Serum Bilirubin During Course of Icterus. H. Deenstra.—p. 223.
Determination of Diameter of Red Blood Corpuscles. L. Goldberg, Febe Gunvall, Greta Hammarsten and G. Lindgren.—p. 238.
*Necrotizing Generalized Arteritis Due to Use of Sulfonamide Drugs. T. G. van Rijssel and L. Meyler.—p. 251.

**Arteritis Due to Sulfonamide Drugs.**—Van Rijssel and Meyler report 7 patients with a generalized necrotizing arteritis. In 6 with a fatal outcome, necropsy revealed necrotizing inflammation of the blood vessels, especially of the arteries. The walls of these vessels contained infiltrating cells, mononuclear and polynuclear cells, fibrinoid swelling and partial necrosis. The elastic fibers had vanished. The lumen of some of the vessels contained many polymorphonuclear leukocytes; a few vessels showed thrombosis. The tissue around the vessels was infiltrated with polymorphonuclear cells. One patient had lesions only in the kidneys, but the other 5 showed similar changes in the arteries of many organs, and some also showed signs of slight interstitial myocarditis. The authors feel that the allergic state was probably not brought on by the various infections. The symptoms appeared to be related to the administration of sulfonamide compounds, and the lesions were similar to those described in the American literature as allergic inflammation of the vessels due to sulfonamide drugs. The authors suggest that the noxious action of the sulfonamide compounds may be explained in two ways: 1. Sulfonamide compounds, after conjugation with protein, act as antigen which leads to allergic reactions. 2. Sulfonamide drugs cause disintegration of microorganisms, in this way liberating substances which act as antigens. The authors stress the need of caution in the administration of sulfonamide drugs. They should be given only in cases in which bacteriologic examination indicates that penicillin will be useless and only the sulfonamide drugs will counteract the causal organism. The sulfonamide drugs should never be given for fever only; if they are absolutely necessary they should be given in large doses for a short time. Their use over a long period in small doses is inadvisable, because it may sensitize the organism. The volume of the urine should be measured every day and should not be less than 1,500 cc. Allergic symptoms should be looked for: skin eruptions, conjunctivitis, eosinophilia, polyneuritis, changes in the urine, polyarthritis, asthma, restlessness; if they are present use of the drug should be discontinued immediately.

## Archivos del Instituto de Cardiología, México, D. F.

### 18:625-752 (Oct. 30) 1948. Partial Index

*Surgical Treatment of Hypertensive Cardiopathy and of Cardiac Insufficiency from Hypertension. I. Chávez and L. Méndez.—p. 680.

**Surgical Treatment of Hypertensive Cardiopathy.**—Chávez and Méndez performed a lumbodorsal sympathectomy on 11 patients with hypertensive cardiopathy complicated by grave cardiac insufficiency. One of the patients died from cerebral hemorrhage eleven days after the operation. Another patient had undiagnosed meningitis of long duration. He died on the day after the operation from occlusion of the aqueduct of Sylvius. A third patient died from uremia ten months after the operation. Eight patients experienced great improvement. The good results have persisted for periods which vary between one year and a half and three years after the operation. All the patients were reported to be in satisfactory condition with no recurrence of cardiac insufficiency. Some of the patients had returned to work. The authors believe that hypertensive cardiopathy is an indication for sympathetic resection, which constitutes the only treatment capable of stopping the progress of the myocardial damage. Cardiac insufficiency, even in cases in which the disease does not respond to digitalis, can be controlled by operation, provided that the coronary, myocardial and other visceral lesions are not severe and cardiac insufficiency is not of long duration.

## Deutsche medizinische Wochenschrift, Stuttgart

### 74:193-224 (Feb. 18) 1949. Partial Index

*Laboratory Infection with Q Fever. E. G. Nauck and F. Weyer.—p. 198.
Diagnosis of Recessive Heredity. W. Weitz.—p. 202.
*Significance of Tuberculin Tests and of Roentgen Examination for Diagnosis and Prognosis of Tuberculosis in Childhood. K. H. Krohn.—p. 206.
Neurohormonal Regulation During Pregnancy and Significance of Sacral Autonomic Nervous System. K. Habbe.—p. 210.
Problem of Refertilization. H. Bosch.—p. 211.
"Arsphenamine Rheumatism" and Its Modification by Calcium Thiosulfate. F. Voss.—p. 212.

**Laboratory Infection with Q Fever.**—Nauck and Weyer say that in August 1947 there developed in their typhus laboratory a number of febrile attacks in which Rickettsia of the wolhynica type were demonstrated by means of the louse test. These cases were responsible for the fact that the first cases of laboratory infections with Q fever were mistaken for Wolhynic fever or typhus. The first case of Q fever appeared on November 6, but this case was identified as such only in retrospect. The first case in which the diagnosis of Q fever was established occurred on Nov. 21, 1947, and the last on Feb. 21, 1948. During this time 7 definitely verified cases occurred and 4 doubtful ones. The clinical aspects of these cases were the same as those reported in other laboratory epidemics. In 4 of the cases they verified the diagnosis by the demonstration of the causal organism following the introduction of blood into mice or guinea pigs, by transferring sputum to mice, by letting lice or ticks feed on patients or by inoculating mice with organ pulp. Even after the fever subsides the causal organism may still be present in the blood, but this could not be demonstrated in all of the patients. Verification of the diagnosis by complement fixation reaction was impossible, because the antigen supply was inadequate. The cases of Q fever appeared only after the strain of Q fever Rickettsia, which was maintained in lungs and spleens of mice, had passed through ticks. The specific source of infection is not known, but infection by dust containing the causal organism is most likely. Fluctuations in virulence may explain some of the peculiar epidemiologic aspects of Q fever. Since this report was completed 2 additional cases of laboratory infection with Q fever occurred. In these cases again infection by dust seemed most likely.

**Tuberculin Test and Roentgen Examination in Tuberculous Children.**—The manner in which the tuberculin test is used at present involves only a local reaction, which is all that is desired because the production of a focal reaction involves risks. In view of the population density and prevalence of tuberculosis now existing in Germany, more than 90 per cent of the adults have been infected with tubercle bacilli some time during their childhood. A positive reaction to a tuberculin test is therefore of little significance in adults. A positive reaction in a child signifies only that the child has had contact with the toxin of tuberculosis. The focus must be found, and after it has been established, various diagnostic procedures must be used in order to establish the biologic reactivity. Results of cutaneous tests must be evaluated with great caution. Intercurrent diseases, such as measles, scarlet fever, whooping cough and mumps, modify the allergic status and may cause a negative reaction. They may also stimulate the progression of the tuberculous process. Thus the cutaneous test may fail to disclose the true status at a time when the danger of progression or activation is especially serious. A diet low in protein decreases the antibody formation, and for this reason failures of cutaneous tests are particularly likely at present. In spite of these shortcomings, the cutaneous test is indispensable in the evaluation of the tuberculous process. The author demonstrates the value of roentgenologic studies in the course of tuberculosis. Roentgenoscopy detects hidden foci; roentgenograms are valuable records which permit comparisons at a later examination. The clinical interpretation of the roentgenologic observations in children must take account of the fact that exudative reactions predominate in children. The author discusses roentgenologic aspects of the forms of tuberculosis that are characteristic of childhood, particularly the primary complex and tuberculosis of the hilar region. Although there are other valuable methods of examination for tuberculosis in children, they are definitely less important than the combined use of tuberculin tests and roentgenoscopy in the diagnosis and prognosis of tuberculosis in children.

## Wiener klinische Wochenschrift, Vienna

### 61:97-112 (Feb. 18) 1949

Introduction in Treatment of Tuberculosis of Larynx. A. I. Cemach.—p. 97.
*Embolectomy Performed on Abdominal Aorta. W. Dick.—p 99.
Contribution to Neurogenesis of Peptic Ulcer. L. P. Avancini.—p. 104.
*Blood Transfusion Syphilis. L. Arzt.—p. 105.

**Embolectomy.**—Dick treated 5 patients with embolism of the abdominal aorta at the bifurcation into the two iliac arteries by embolectomy. Two of these cases, 1 in a child aged 2½ years and the other in a woman aged 22, are reported in detail. The direct retroperitoneal approach was employed in all 5 cases. Lumbar anesthesia was used in the 4 adult patients, while a few drops of ether were sufficient in the case of the child. Treatment with methylene-dioxybenzyl-methyl-methylene-dioxy-isoquinoline (eupaverin) was instituted in 3 of the author's cases before the surgical intervention, but was ineffective. Intravenous or transcutaneous, intra-aortal injections of eupaverin should be given nevertheless in all cases in which embolism of the aorta is suspected; it may be simulated by vascular spasm and in such a case the drug will be effective. Surgical intervention should not be postponed for more than one hour if definite improvement does not result from treatment with eupaverin. Embolectomy should be performed within the first six hours after the embolism when the intima of the vessel has not yet been impaired and when secondary thrombosis has not occurred. Twelve hours after the embolism sympathectomy and resection of the occluded portion of the vessel rather than embolectomy should be performed. In 2 of the author's cases heparin sodium injections were given immediately after the suture of the vessel: Disturbances of healing did not occur. Thrombosis threatens only for the first few hours after embolectomy and, therefore, heparin sodium, but not dicumarol,® is indicated.

**Blood Transfusion Syphilis.**—According to Arzt, the percentage of transmission of syphilis by blood transfusion is not known, but 1 infection per 4,000 cases may be admissible for certain countries in certain times. The process of infection with Treponema pallidum by transfusion differs from that by cutaneous route in that there is no filtration through the lymph nodes and in that the infective material is much more massive, considering the transfusion of 300 to 500 cc. of blood. The most dangerous donors are persons in the first incubation period, in the absence of any clinical symptoms and serologic proof. The right selection of the donor is the essential point in the problem of prevention of syphilis by blood transfusion. Persons with serologically latent syphilis should be rejected. Professional blood donors should be preferred to occasional donors among relatives of the patient. Professional donors are examined first on registration and have to undergo regular control examinations by a venereologist. Immediately preceding the transfusion a renewed clinical, and if possible serologic, examination, at least with a rapid reaction, should be made. Donors with serologically negative reactions who present symptoms from which syphilis may be expected and particularly donors with negative reactions with manifestations of any kind at the genitals should be rejected. The risk of transmission of syphilis may be reduced by the use of blood or serum treated with sodium citrate and preserved by refrigeration, instead of fresh blood; the donor of the blood which is to be preserved should be subjected to a Wassermann test.

# Book Notices

**Blood Transfusion.** By Elmer L. deGowin, M.D., Associate Professor of Internal Medicine, State University of Iowa, Iowa City, Robert C. Hardin, M.D., Assistant Professor of Internal Medicine, State University of Iowa, Iowa City, and John B. Alsever, M.D., Senior Surgeon, United States Public Health Service. Cloth. Price, $9. Pp. 587, with 200 diagrammatic drawings. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C. 2, 1949.

Few fields of medical practice have expanded in recent years as rapidly and as successfully as transfusion of blood, plasma and their substitutes. The number of indications has increased tremendously, the danger of reactions has been reduced to a small fraction of what it was only ten or fifteen years ago. The qualifications of the three authors are attested to by the various positions held by them and by the long list of their contributions to the subject of the monograph.

The indications for the use of blood, plasma and substitutes, shock, the theory and practice of blood grouping (including the Rh factor, and of pretransfusion tests, the technic of transfusion of blood and plasma, the preparation of plasma, blood derivatives and plasma substitutes and the organization and management of a transfusion service and of blood banks are the subjects dealt with in 27 chapters. The lucidity of presentation of some of the most difficult subjects in medicine is admirable, as is the thorough and complete treatment. Ample bibliographic references are included in each chapter. The index is well organized. The book deserves widespread use by physicians, surgeons, clinical pathologists, blood bank directors and medical technologists.

**The American Soldier: Adjustment During Army Life. Volume I.** By Samuel A. Stouffer and others. Studies in Social Psychology in World War II. In Two Volumes. Cloth. Price, $7.50; $13.50 per set of 2 volumes. Pp. 599, with 17 charts. Princeton University Press, Princeton, N. J., 1949.

**The American Soldier: Combat and Its Aftermath. Volume II.** By Samuel A. Stouffer and others. Studies in Social Psychology in World War II. Cloth. Price, $7.50; $13.50 per set of 2 volumes. Pp. 675, with illustrations. Princeton University Press, Princeton, N. J.; Oxford University Press, Amen House, Warwick Sq., London, E.C. 4, 1949.

Tolstoy long ago wrote in his book War and Peace, "In Warfare the force of Armies is the product of the mass multiplied by something else, an unknown X." In an effort to determine this unknown factor, the Research Branch, Information and Education Division, United States Army, interviewed more than half a million soldiers during World War II. Never before had modern methods of social science been employed on so large a scale by such competent technicians. The Army exercised no control on the interpretations or conclusions expressed in these volumes, which are the sole responsibility of the authors in their capacity as civilian social scientists. A major purpose of the research staff was to provide a base of factual knowledge which would help the director of the Army Information and Education Division in his administrative and policy decisions.

The reliability of facts deduced from the interpretation of statistics depends on numerous variables; however, it would appear from the material presented by the authors that proper recognition of these variables and numerous cross checks have strengthened the validity of the statistical deductions. The mass of charts, figures and tables does not lend itself to rapid assimilation, and long periods of study are essential for a proper understanding of the contents.

Volume I, "Adjustment during Army Life," concerns itself primarily with the personal reaction of the soldier to his military environment. The soldiers' attitudes were analyzed in relation to variables such as age, level of education, marital status and color. The attitudes studied ranged from the soldier's reaction toward his superior officer through such analyses as job satisfaction, and other factors relative to his adjustment.

Volume II, "Combat and its Aftermath," studies the attitudes and aptitudes of the soldier in relation to combat. The authors show a definite correlation of precombat attitude with combat performance. Furthermore, according to their interpretation of collected statistics, the better educated men, those with the highest mechanical aptitude scores, the older men and the married men tend to get the better performance ratings in combat. Further studies include combat motivation, the control of fear in combat, problems of combat replacements, attitudes of ground combat troops toward rear echelons and the home front, problems of rotation and reconversion, and the point system for redeployment and discharge.

This work is primarily of importance to the National Military Establishments; nevertheless the information presented and the mechanics of collection of data developed should interest students of civilian social psychology. The many authors who were engaged in the assemblage of this material should receive a certain sense of gratification from the knowledge that this gigantic task will provide further impetus for a great advance in the social relations of man.

**The Commonwealth Fund Thirtieth Annual Report for the Year Ending September 30, 1948.** Paper. Pp. 48. Commonwealth Fund, Division of Publications, 41 E. 57th St., New York 22, 1949.

Entering on its thirtieth year devoted to doing something "for the welfare of mankind," the Commonwealth Fund reviews in its annual report the projects undertaken during the past year.

Most important of these projects is the attempt to better patient-physician relationships in cases involving mental health. By joining forces with medical schools to add psychiatrists to the teaching staffs, by giving fellowships to advanced workers dealing with mental cases and by making arrangements for interns to receive the feeling of general medical practice in rural hospitals, the Commonwealth Fund has been able to demonstrate to the physician the importance of realizing the mental situation of his patient.

Closely related to this medical education is the preventive service aiding mental health which is taught through lectures, clinical work and discussions. The stress here, too, is on personal attention in treatment. Field work is done on a county or state basis.

In addition to aiding rural hospitals build and equip, the fund supports the Council of Rochester Plan, begun in 1946. Small hospitals receive benefits in knowledge of organization and medicine from adjacent larger hospitals.

Other projects include three or four year grants for medical research and awarding of twenty-eight fellowships, now given under less limiting requirements for eligibility. The ten books and pamphlets published are also listed, and the report closes with a balance sheet of the Commonwealth Fund and a list of the appropriations voted during 1947-1948.

**A Treatise on Obstetric Labor.** By Richard Torpin, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, University of Georgia School of Medicine, Augusta, Georgia. Chapter on Erythroblastosis Fetalis and the Rh Factor. By Edith L. Potter, M.D., and Philip Levine, M.D. Cloth. Price, $7. Pp. 590, with 185 illustrations. Augusta Obst. and Gyn. Book Co., Box 2038, Hill Branch, Augusta, Ga., 1948.

The book was prepared for physicians and obstetricians. The opening chapter is called Test of Labor. The sequence of chapters is surprising in that the chapter on amnesia, analgesia and anesthesia follows a discussion of the pelvis, and in this chapter alone 118 articles are quoted. Much of the book is supplied by quotations from other authors or from previous publications. In the section on rural obstetrics, the idea of early ambulation is supported.

In the chapter dealing with forceps delivery, some of the reproductions are poor. The illustrations on postpartum hemorrhage are meritorious. Immediately after this chapter there is one dealing exclusively with the retained placenta.

Chapter XIV is a reprint from The Journal of the American Medical Association dealing with the influence of the placenta on the fetal presentation. In the chapter on placenta previa, the drawings do not reveal placenta previa, and thus the insertion of the bag fails to illustrate the effect of the tampon.

In the treatment of abortion (page 299), he states, "scraping or curetting of the uterine lining is not necessary and is dangerous. . . ."

The advice on care of the intrauterine dead fetus is good. The discussion on puerperal sepsis seems incomplete. On page

# Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

## ARTHRITIS AND BEER DRINKING

*To the Editor:*—Does drinking beer cause arthritis or arthralgia? Is this true arthritis or an allergic response? M.D., Texas.

[This inquiry was referred to two authorities, whose respective replies follow.—ED.]

ANSWER.—Certain evidence that beer drinking causes arthritis or arthralgia is lacking. On theoretic grounds one may assume that it is possible to be allergic to one or more ingredients of beer, and that on these grounds an allergic arthritis might follow its consumption. Such a situation must be rare, however, if it occurs at al[illegible]en in gout, there is lack of evidence that the intake of [illegible] detrimental effect on the disease

been called psychokinesis. This effect has been demonstrated in our laboratory experiments repeatedly. It is still, however, a new finding and has not received wide recognition as yet.

2. Scientific research regarding these questions is under way at present. The principal research center is the Parapsychology Laboratory at Duke University. Next in amount of activity is the Department of Psychology, City College of New York, which works in conjunction with the American Society for Psychical Research. Work by individuals is going on, however, in many colleges and universities over the country, but only in a minor, part time fashion.

3. With respect to research as to the immortality of the soul, only preliminary studies for the purpose of developing suitable methods are being carried out. This is going on at Duke University.

## RABIES VACCINE PARALYSIS

*To the Editor:*—A woman aged 22 was bitten by a rabid dog six weeks ago, at which time she was in perfect health. She was at once started on antirabies treatment with vaccine approved by the Kentucky State Board of Health. The doctor was giving this each day and in alternate arms. The eleventh dose came in the right arm; two hours after the injection the patient was seized with severe pain in the right shoulder, and some two hours later was completely paralyzed from the neck down. This lasted for several days but did not involve the muscles of deglutition or respiration enough to embarrass the patient. After two weeks she regained sensation of the body from the umbilicus up, and also motion and reflexes. Five weeks after the inception of the paralysis she had no action of the bladder or bowel. She had a catheter in the bladder and did not know when the bowel should move. Reflexes were absent from the umbilicus down. This patient had chronic headache. She had frequent and rather severe attacks. I started treatment with sodium iodide. The patient's reaction to histamine was highly positive. What can be expected as to recovery? Will other treatment be more successful?

A. David Willmoth, M.D., Louisville, Ky.

ANSWER.—Occasionally, in a patient who is receiving active treatment for rabies with an attenuated form of rabies vaccine, encephalomyelitis develops. This disease may take on one of three forms: (1) paralysis of a type found in rabies; (2) myelitis of either cervical, thoracic or lumbar regions, or (3) polyneuritis with facial paralysis. Why this disease develops during the treatment is not fully understood. The fact that an attenuated form of rabies vaccine is used in the therapy strongly suggests an attenuated form of hydrophobia. Some authors are inclined to believe that the vaccine used releases another virus, akin to that in rabies, because the clinical picture resulting is like that seen in hydrophobia. There is no scientific treatment for antirabic encephalomyelitis. At best any therapy is purely or entirely symptomatic. The outcome is usually or frequently disastrous in that the patient may die. When this does not occur the patient may recover with only a small amount of residual effects. On occasions, however, the paralysis may become permanent. Certainly all injections of vaccine should be stopped once this antirabic picture develops. Despite the fact that encephalomyelitis may follow injections of antirabic vaccine it is strongly suggested that whenever a case of rabies presents itself and one is sure that the biting culprit has hydrophobia, antirabic vaccine therapy should be started at once.

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C. F. Leonard, M.D., East St. Louis, Ill.

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ANSWER.—As rat bites do not cause rabies there is no reason for using rabies vaccine in such cases. It is well known that rabies vaccine by itself in some cases may cause undesirable reactions.

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484, the statement reads, "The lower uterine segment operation is relatively safely done on a patient who has been in labor even several days if there have been no vaginal examinations, and if regular intravaginal anti-septics have been used, due attention having been paid to prevention of anemia, dehydration and discomfort of the patient."

Just before the index there are 73 case reports.

This is obviously a book of subjects which does not completely span the entire field of obstetrics but with irregularity and imbalance in the degree of interest. The bibliography is impressive.

**Practical Aspects of Thyroid Disease.** By George Crile, Jr., M.D., F.A.C.S., Department of Surgery, Cleveland Clinic, Cleveland, Ohio. Cloth. Price, $6. Pp. 355, with 101 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C. 2, 1949.

According to the preface the author's conclusions are based on his experience in the surgical treatment of 1,000 patients with diseases of the thyroid plus observations of several hundred patients with hyperthyroidism treated with antithyroid drugs by one of his colleagues. Most thyroid diseases have moved from the domain of the surgeon to general practice. As a consequence both internists and surgeons will need to familiarize themselves with the recent developments in the diagnosis and treatment of diseases of the thyroid and to cooperate more closely than heretofore.

The book has 27 chapters, 1 of which is devoted to the anatomy and 1 to the physiology of the thyroid. One is devoted to a discussion of the diagnosis of hyperthyroidism. The author's opinion of the value of blood iodine determinations will be comforting to the many clinicians who do not have access to facilities for this test. He points out that the test is difficult and expensive and says that the results are too irregular and inconsistent to be of clinical value.

The chapter devoted to "Anti-Thyroid Drugs in the Treatment of Hyperthyroidism" is particularly good, as is the chapter on "Roentgenotherapy and Radioactive Iodine in the Treatment of Hyperthyroidism." Eight chapters are devoted to various aspects of the surgical treatment of hyperthyroidism.

A.T. 10 (dihydrotachysterol), which is esteemed highly by many men in the treatment of hypoparathyroidism, is viewed with suspicion by the author, who feels that its use entails some danger by its cumulative effect in raising the serum calcium to toxic levels. He favors the use of vitamin D in doses of 50,000 to 300,000 units daily. He could have made the discussion of cretinism and mongolism more helpful by enumerating the five characteristics of mongolism not seen in cretinism. The bibliography is well chosen and sufficiently extensive.

**Erkennung und Behandlung der organischen Lösungsmittelvergiftungen.** Von Dr. Med. Franz Borbely, Chefarzt des Fabrikkrankenhauses der Manfred Weiss Stahl- und Metallwerke A.-G. Budapest. Geleitwort von Prof. Dr. Fritz Schwarz, Direktor des Gerichtlich-Medizinischen Instituts der Universität Zürich. Paper. Price, 13.80 Swiss francs. Pp. 168. [Sole distributors for the U. S. A. and Canada: Grune & Stratton, Inc., 381 Fourth Ave., New York.] Hans Huber, Marktgasse 9, Bern, 1946.

Clinical aspects of acute and chronic poisoning by the common industrial solvents are stressed in this monograph. About 20 pages are devoted to the clinical symptoms and syndromes of poisoning by solvents in general and about 100 pages to individual solvents, for each of which is given its nonspecific and specific actions; the clinical course, diagnosis, prophylaxis and therapy of poisoning by the solvent; and a short bibliography, chiefly of European publications. The solvents covered are: aliphatic hydrocarbons; methyl, ethyl, propyl, butyl and amyl alcohols; dioxane; aldehydes and ketones, especially acetone; ethers, especially diethylether; formates and acetates; dimethyl sulfate; fifteen common aliphatic chlorinated hydrocarbons; carbon disulfide; aromatic hydrocarbons, alcohols, esters, acids and chlorine compounds; cyclohexane and related hydrocarbons, and terpenes. The first part of the book acquaints the doctor with the names of solvents commonly used for: extracting fats and formulating protective coatings, rubber compounds and plastics, for heat exchange mediums, fuels, explosives, fire extinguishers, etc. Typical accidents causing acute poisoning are described. Because the average workman often does not know the chemical nature of solvents to which he is exposed, because solvents often are marketed under fanciful names and because differential diagnosis of solvent poisoning is difficult, the doctor is advised to secure samples of solvents when poisoning is suspected. A little information is given on the qualitative analysis of such samples. The book is written in simple German, and is well organized and indexed.

**School Health Education: A Textbook for Teachers, Nurses and Other Professional Personnel.** By Delbert Oberteuffer, Ph.D. Harper's Series in School and Public Health Education, Physical Education, and Recreation. Delbert Oberteuffer, Editor. Cloth. Price, $3.25. Pp. 405. Harper & Brothers, 49 E. 33d St., New York 16, 1949.

This book is a text for the preparation and in-service education of teachers and administrators and other personnel in school health education. The major portion of the material is devoted to school health education procedures and policies, but considerable attention is given in the third section of the book to the health service activities, including healthful school living. Emphasis is placed on methods and practices which have proved successful in actual school situations. Specific health problems confronting the schools are described and the role of effective health education in solving these problems is outlined. The task of the schools in health education is defined as revealing the facts and meanings of the work of the scientist and placing appropriate interpretations and applications on them. How this objective, with stress on bringing about desirable health behavior, can be accomplished through direct teaching, correlation and integration of health in the curriculum is presented in considerable detail. Suggestions as to methods and procedures for organization and evaluation of instruction are also made.

Physicians will be interested in the attention given to the necessity for one's developing critical thinking through health education about scientific health services as compared to spurious healing cults and "patent medicines and cures." Suggestions as to the reciprocal relations which can exist between the school health program and physicians, dentists and their professional societies are made.

**Investigations on Agonal Acidosis..** By Ib Fabricius Hansen. Edited by Geoffrey Walker, B.Sc. Translated by Hans Andersen, M.D. Paper. Pp. 135, with 15 illustrations. Stechert-Hafner, Inc., 31 E. 10th St., New York 3; Povl Branners Forlag A/S, St. Kongensgade 29, Copenhagen, 1948.

This monograph on the chemical changes in the blood during the agonal state was completed shortly before death prematurely terminated the promising career of the author. It contains the most detailed studies with which the reviewer is acquainted on the chemical composition of the blood during the transition from life to death. Following introductory sections on previous work on agonal acidosis, the clinical aspects of the preterminal state and the concept of acidosis, there is a description of the material and analytic methods used. The results are presented in great detail, with tabular summaries. Twenty-three chemical and physiochemical measurements were carried out on almost all the 38 subjects studied. Unfortunately, sodium and potassium determinations were not done. There is a short section on therapy.

Hansen found a fall in blood $p_H$ usual in the agonal state. In 18 of the cases values of less than 7.10 were found. The lowest premortal $p_H$ was 6.80. Since the $p_H$ was below 7.00, the lower limit generally regarded as compatible with life, in one third of the patients, it seems likely that in some the acidosis was the direct cause of death. The acidosis was most often of the mixed type, with both metabolic and respiratory components. In contrast to $p_H$, plasma bicarbonate is reduced in only about a third of the cases; the carbon dioxide tension is often increased. The lactic acid content of the blood is augmented in the agonal state. Hansen found no correlation between the cause of death and the severity of the acidosis, but the observations indicated that the fall in $p_H$ is directly proportional to the final period of unconsciousness. The therapeutic value of drugs increasing the irritability of the respiratory center, oxygen, and the intravenous administration of 1.3 per cent solution of sodium bicarbonate are briefly discussed.

The mass of data on the chemical state of the blood in the agonal state should interest workers in various clinical and biochemical fields.

# Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

## ARTHRITIS AND BEER DRINKING

**To the Editor:**—Does drinking beer cause arthritis or arthralgia? Is this true arthritis or an allergic response? M.D., Texas.

[This inquiry was referred to two authorities, whose respective replies follow.—Ed.]

Answer.—Certain evidence that beer drinking causes arthritis or arthralgia is lacking. On theoretic grounds one may assume that it is possible to be allergic to one or more ingredients of beer, and that on these grounds an allergic arthritis might follow its consumption. Such a situation must be rare, however, if it occurs at all. Even in gout, there is lack of evidence that the intake of beer has a detrimental effect on the disease.

Answer.—Drinking beer is not known to cause arthritis. Patients with gout may have attacks of acute gouty arthritis more frequently if indulging in beer or other alcoholic beverages. Though the cause of gout is unknown, alcoholic beverages, per se, are not thought to be a primary etiologic factor.

Presumably, allergy to malt might be manifested by use of beverages, such as beer, in which malt is a basic constituent, but in such an instance allergic manifestations to malt in other forms also would be demonstrable.

## RESEARCH ON IMMORTALITY

**To the Editor:**—Since a recent newspaper story about Dr. Rhine of Duke University, I have had a number of questions asked that I cannot answer and I should appreciate information about them. The story was in reference to his belief that the immortality of the soul could be proved by science, and also referred to his work on mental telepathy. I should also like your answer to the following questions: 1. What is the present accepted scientific status as to mental telepathy, spiritualism and one's control of dice and cards, as Dr. Rhine describes? 2. Is there any other scientific research under way at the present time regarding these questions? 3. Is there any research now going on as to the immortality of the soul? Please describe.

M.D., Tennessee.

Answer.—The Association for Research in Nervous and Mental Diseases, which includes leading neurologists and psychiatrists of America, has been considering a scientific study of extrasensory perception. Most of these specialists felt that the data that had been accumulated should be evaluated scientifically. The subject may be reviewed at a forthcoming meeting. Many members not only expressed an interest in the subject but stated that they had observed psychologic phenomena which might be classed as extrasensory perception or mental telepathy.

With the perfection of the electroencephalogram, demonstration can be made that the brain does send out electrical impulses which can be recorded. These waves, at present, can be used only in the process of diagnosis and can be defined as either pathologic or normal. Possibly the specific waves can be more definitely interpreted. Theoretically, such waves might be considered an indication of thought transmission. At present, means do not exist for recording thought waves visually.

The immortality of the soul is considered a philosophic problem and is dependent on the definition of the soul.

As J. B. Rhine states, in man's attempt to make clear to himself his position in the universe, he has created various religions, and with the development of culture many speculative philosophies have been concocted out of untested logic. With the advent of science, ways of finding out the truth have been devised. This does not necessarily mean that man's conception of the Infinite will be proved incorrect. It is only by the understanding of man himself that the soul can be understood.

[The questions were also referred to Dr. J. B. Rhine, who replies:]

Answer.—1. There is a fairly respectable amount of acceptance of telepathy among scientists, and this is noticeably growing. There is no scientific acceptance of spiritualism worthy of attention. An occasional scientist has expressed acceptance of the claims of the spiritualists, but I know of no one living today who does. The control of dice by direct mental influence has been called psychokinesis. This effect has been demonstrated in our laboratory experiments repeatedly. It is still, however, a new finding and has not received wide recognition as yet.

2. Scientific research regarding these questions is under way at present. The principal research center is the Parapsychology Laboratory at Duke University. Next in amount of activity is the Department of Psychology, City College of New York, which works in conjunction with the American Society for Psychical Research. Work by individuals is going on, however, in many colleges and universities over the country, but only in a minor, part time fashion.

3. With respect to research as to the immortality of the soul, only preliminary studies for the purpose of developing suitable methods are being carried out. This is going on at Duke University.

## RABIES VACCINE PARALYSIS

**To the Editor:**—A woman aged 22 was bitten by a rabid dog six weeks ago, at which time she was in perfect health. She was at once started on antirabies treatment with vaccine approved by the Kentucky State Board of Health. The doctor was giving this each day and in alternate arms. The eleventh dose came in the right arm; two hours after the injection the patient was seized with severe pain in the right shoulder, and some two hours later was completely paralyzed from the neck down. This lasted for several days but did not involve the muscles of deglutition or respiration enough to embarrass the patient. After two weeks she regained sensation of the body from the umbilicus up, and also motion and reflexes. Five weeks after the inception of the paralysis she had no action of the bladder or bowel. She had a catheter in the bladder and did not know when the bowel should move. Reflexes were absent from the umbilicus down. This patient had chronic headache. She had frequent and rather severe attacks. I started treatment with sodium iodide. The patient's reaction to histamine was highly positive. What can be expected as to recovery? Will other treatment be more successful?

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Answer.—Occasionally, in a patient who is receiving active treatment for rabies with an attenuated form of rabies vaccine, encephalomyelitis develops. This disease may take on one of three forms: (1) paralysis of a type found in rabies; (2) myelitis of either cervical, thoracic or lumbar regions, or (3) polyneuritis with facial paralysis. Why this disease develops during the treatment is not fully understood. The fact that an attenuated form of rabies vaccine is used in the therapy strongly suggests an attenuated form of hydrophobia. Some authors are inclined to believe that the vaccine used releases another virus, akin to that in rabies, because the clinical picture resulting is like that seen in hydrophobia. There is no scientific treatment for antirabic encephalomyelitis. At best any therapy is purely or entirely symptomatic. The outcome is usually or frequently disastrous in that the patient may die. When this does not occur the patient may recover with only a small amount of residual effects. On occasions, however, the paralysis may become permanent. Certainly all injections of vaccine should be stopped once this antirabic picture develops. Despite the fact that encephalomyelitis may follow injections of antirabic vaccine it is strongly suggested that whenever a case of rabies presents itself and one is sure that the biting culprit has hydrophobia, anirabic vaccine therapy should be started at once.

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C. F. Leonard, M.D., East St. Louis, Ill.

[This inquiry was referred to two authorities, whose respective replies follow.—Ed.]

Answer.—As rat bites do not cause rabies there is no reason for using rabies vaccine in such cases. It is well known that rabies vaccine by itself in some cases may cause undesirable reactions.

Answer.—Rats are susceptible to rabies and theoretically constitute a possible reservoir and source of infection for man. Actual experience in this country has shown that the number of rats proved to be infected with rabies has been minimal. In advising physicians concerning rabies immunization after rat bites, the same criteria should be applied as applies to bites of any other animals, such as dogs; namely, if the biting rat is caught and can be observed, vaccine may be withheld as long as the rat does not show symptoms of rabies within a period of two weeks' observation. If the rat gets away or even if apprehended and the bite has been particularly severe, in a geographic area where there is known to be an active reservoir of rabies in other animals, then it would seem necessary to go ahead and immunize on the possibility that the biting rat may have had rabies infection. You are correct in weighing the possibilities of a patient's having a serious reaction to the rabies vaccine against the chances of the person's having actually been exposed to rabies.

## PREVENTING BRUCELLOSIS

*To the Editor:*—I am making a special study of brucellosis for this community and would like an official statement regarding specifc measures recommended for control and eventual abolition of this disease.

John J. Clancy, M.D., Hartford, Conn.

Answer.—The control and eventual eradication of brucellosis is dependent on available epidemiologic knowledge of the disease. The reservoir of brucellosis is in domestic animals, especially cattle, hogs and goats. The disease is not transmitted from human being to human being except under extremely rare conditions, such as the establishment of an infection in utero or the transmission of Brucella to a nursing infant through the milk of an infected mother. Brucella organisms are shed in the milk of infected cattle and goats, and, therefore, the disease is contracted by human beings through the ingestion of raw milk or products of milk such as cheese and butter prepared from unpasteurized milk. One method of controlling the disease in human beings, then, is to have all milk pasteurized for human consumption. A second method of contracting the disease is through dermal contact with infected material such as animal tissues, secretions and excretions. In this manner, the disease is occupational and may affect farmers, livestock producers, meat-packing plant employees and veterinarians. There are no practical procedures for preventing brucellosis in human beings under these conditions except by eradicating the disease at its source. The disease can be eliminated in cattle by vaccination of calves and by eradicating from a herd animals which have positive agglutination reactions. The eradication of brucellosis in swine poses a more difficult problem in that the blood test is not so reliable in this species. Brucellosis in goats constitutes a problem in some sections of the country, particularly the Southwestern states.

## ULTRAVIOLET LIGHT IN INDUSTRY

*To the Editor:*—A manufacturer of electric sheets asks whether there would be any harm in the use of mercury vapor, 100 watts, Westinghouse or Hanovia ultraviolet lamps. Lines have to be made on the sheets to guide the workers sewing on the electric wire. These lines often show. He has an ink which is visible only in ultraviolet light. What, if any, harmful effects would there be to the skin or body of a worker exposed to this light, even though exposure is only to hands, eight hours a day, 40 hours a week?

M. J. Frank, M.D., Beacon, N. Y.

Answer.—Therapeutic ultraviolet lamps are not suited for the purpose mentioned. Other types emit rays of such Angstrom length as largely to avoid any significant damage to the skin or eyes. Among others, Hanovia, General Electric and Westinghouse manufacture such lamps in various sizes and with as low a watt consumption as 10. It is possible that long exposure may lead to skin pigmentation but without erythema. Likewise, the need may arise for the wearing of a light eye shield or goggles. With properly chosen lamps, the real physiologic problem is not related to ultraviolet damage but to eye strain. The types of lamps mentioned emit little visible light and properly are termed "black light lamps." Since fluorescence best shows up in darkness, a visual problem arises from the lack of proper illumination. However, suitable arrangement may be devised so that adequate general lighting may exist, together with sharply localized ultraviolet light such as will sufficiently activate the phosphor. Since the number of fluorescing substances is high, the choices should be such as to provide fluorescence even when visible light is nearby. In general, it is the intent to state that with proper choice of lamps this sewing operation may be carried out without the prospect of any significant harmful action on skin or eyes.

## ANATOMIC ASYMMETRY

*To the Editor:*—The question recently arose in a consultation on an industrial case as to whether the measurements of the left leg were larger than the right leg in a perfectly normal person without any antecedent disease in the legs. Please supply information on this question.

David C. James, M.D., Phoenix, Ariz.

Answer.—The question of bilateral asymmetry of the human body has been reviewed by George Halperin in an article published in the *Archives of Internal Medicine* (48:676-682, 1931). It appears that as a result of exact measurements taken from a great number of cadavers and living subjects it has been established that the two halves of the body in the human species are never symmetric. Among other asymmetries it is an accepted fact that the left leg is more often longer and stronger than the right. That is probably the reason why soldiers begin their marching with the left leg and why jumpers usually employ the left leg for a kickoff. Cox (Cox, W. C.: On the Want of Asymmetry in the Length of Opposite Sides of Persons Who Have Never Been the Subject of Disease or Injury to Their Lower Extremities, *Am. J. M. Sc.* **69**:438, 1875) found that in living subjects the difference in the length of the lower extremities amounted to ⅛ to ⅞ inch (0.32 to 2.23 cm.) and that the left extremity was more often the longest.

## INTRADERMAL TYPHOID IMMUNIZATION

*To the Editor:*—I would like to know the number of intradermal typhoid vaccine injections (0.1 cc.) that are equivalent to the routine immunization of three subcutaneous injections. Also, what is the interval between the intradermal injections?

J. B. Taylor, M.D., Carbondale, Ill.

Answer.—Two recommendations, which vary somewhat, have been made for typhoid immunization by means of intracutaneous injections of antityphoid vaccine. The first of these calls for four intracutaneous injections as follows: 0.05, 0.1, 0.15 and 0.2 cc. The second method consists of only three injections of 0.1 cc. each. It is claimed that the latter dosage affords satisfactory protection. With either procedure, the interval between injections is one week. It is likely that a better antigenic response can be accomplished if injections are made two weeks apart.

## ALCOHOL INTOLERANCE

*To the Editor:*—In Queries and Minor Notes, The Journal, March 26, page 896, the statement that alcohol intolerance may be a sign of developing delirium tremens or Korsacow's syndrome is somewhat unsatisfying. I have seen this symptom of a developing intolerance to alcohol often in formerly moderate or heavy drinkers and these were definitely not in the early stages of an alcoholic psychosis. On the contrary, I have regarded the symptom on the basis of the known dynamics of the cases as a functional symptom, the purpose of which is to protect the patient from a growing sense of dependence on alcohol. In cases I have observed the symptom took place as one of the incipient personality changes in the development of a neurosis. I would be glad to hear whether any of your readers have noticed this phenomenon, as I do not recall ever seeing it in the literature. The development of an alcohol intolerance has been mentioned as occurring in soldiers with brain injury as a result of blast and has even been offered as a differential diagnostic sign to distinguish this from the ordinary combat traumatic neurosis. However, I do not believe that this is so, as I have seen the symptom too often in psychoneurotic persons who showed no history or symptoms of injury. I agree with your authority that such a patient is lucky that the "bell tinkles before it tolls."

R. E. Peck, M.D., Brooklyn.

## WARTS

*To the Editor:*—Please refer to Queries and Minor Notes, The Journal of February 26, page 615, under the heading "Warts."

In the "long list of remedies recommended for the treatment of warts," dosage with vitamin A, 100,000 units per day for six to twelve weeks, should be mentioned. In the particular case cited a thorough trial of vitamin A therapy is indicated. In many such cases the results have been spectacularly good.

Being a radiologist, I have for many years been interested in a study of the deleterious influence of irradiation on tissue, and I feel that anything which tends to make roentgen or radium therapy unnecessary, especially in benign conditions and when the patient is young, deserves a great deal of emphasis. Irradiation of warts has caused harm in some persons, and even where the harm is not visible to the casual observer it is nevertheless present in a form which can be visualized histologically. In 60 to 80 per cent of all cases, warts disappear as a result of the ingestion of 100,000 units of vitamin A per day.

W. Edward Chamberlain, M.D., Philadelphia.

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# THE USE OF ESTROGENS AND ANDROGENS IN ADVANCED MAMMARY CANCER

## Clinical and Laboratory Study of One Hundred and Five Female Patients

F. E. ADAIR, M.D.
R. C. MELLORS, M.D.
J. H. FARROW, M.D.
H. Q. WOODARD, Ph.D.
G. C. ESCHER, M.D.
and
J. A. URBAN, M.D.
New York

Estrogens and androgens were used clinically in 105 female patients with either primary or recurrent inoperable mammary cancer who were, with few exceptions, ambulatory when first treated. Of this group, 55 have died of cancer and all survivors have evidence of persistent disease. Hence, the results were analyzed on the basis of temporary objective and subjective changes which occurred during one to twenty-four months' observation. In addition, various laboratory studies were made and analyzed in an attempt to evaluate the clinical changes which were observed. For various reasons, 44 patients were treated for less than one month. Since data on these patients were incomplete, they were excluded from this report.

### REVIEW OF THE LITERATURE

Both Ulrich[1] and Loeser[2] in 1939 drew attention to the possible usefulness of androgens in the treatment of mammary cancer in the human female. Farrow and Woodard[3] in 1942 observed subjective, but no objective, improvement in about half of 33 patients receiving androgens. Of 3 cases described by Fels[4] in 1944, one woman aged 34 had a diminution in the size of supraclavicular lymph nodes, an increase in calcification and a decrease in the size of osseous metastases following the administration of testosterone. Adair and Herrmann[5] in 1946 found objective evidence of improvement in 4 of 11 patients treated with testosterone propionate. Three patients had roentgenographic evidence of improvement in osseous metastases. One patient had a decrease in the size of the primary tumor and of the lymph node metastases. Since 1946, additional reports of the use of androgens in advanced mammary cancer have appeared in the literature.[6] In addition, a report on the use of androgens and estrogens in mammary cancer has been issued by the Subcommittee on Steroids and Cancer, Therapeutic Trials Committee of the Council on Pharmacy and Chemistry of the American Medical Association.[7]

Haddow and others[8] in 1944 first described the use of the synthetic estrogens, diethylstilbestrol and triphenylchlorethylene in a variety of neoplastic diseases including carcinoma of the breast, bladder, rectum, skin and testes. In the same year the Section of Radiology of the Royal Society of Medicine[9] presented a discussion of synthetic estrogens used in cases of advanced mammary cancer. For the extension and the coordination of this work, the Royal Society of Medicine and the British Empire Cancer Campaign have established a Joint Scientific Committee on the Use of Estrogens in Cancer. In this country, reports of the use of estrogens in advanced mammary cancer have been given by Nathanson[10] and by Herrmann, Adair and Woodard.[11]

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This work has been done in part under a fellowship grant of the American Cancer Society recommended by the Committee on Growth of the National Research Council (Drs. Mellors and Escher).

From the Breast Clinic of the Memorial Hospital and the Sloan-Kettering Institute for Cancer Research. This work has been aided by grants from the National Cancer Institute of the United States Public Health Service, the American Cancer Society, the Albert and Mary Lasker Foundation, the Adele R. Levy Fund and the Stranahan Foundation.

[1] Ulrich, P.: Testostérone (hormone mâle) et son rôle possible dans le traitement de certains cancers du sein, Acta, Union internat. contre cancer **4**: 377, 1939.

[2] Loeser, A. A.: Male Hormone in the Treatment of Cancer of the Breast, Acta, Union internat. contre cancer **4**: 375, 1939.

[3] Farrow, J. H., and Woodard, H. Q.: The Influence of Androgenic and Estrogenic Substances on the Serum Calcium in Cases of Skeletal Metastases from Mammary Cancer, J. A. M. A. **18**: 339 (Jan. 31) 1942.

[4] Fels, E.: Treatment of Breast Cancer with Testosterone Propionate, J. Clin. Endocrinol. **4**: 121, 1944.

[5] Adair, F. E., and Herrmann, J. B.: The Use of Testosterone Propionate in the Treatment of Advanced Carcinoma of the Breast, Ann. Surg. **123**: 1023, 1946.

[6] (*a*) Boger, W. P.: Methyl Testosterone and Surgical Castration in the Treatment of Carcinoma of the Breast, J. Clin. Endocrinol. **6**: 88, 1946. Herrmann, J. B., and Adair, F. E.: The Effect of Testosterone Propionate on Carcinoma of the Female Breast with Soft Tissue Metasastases, ibid. **6**: 769, 1946. Schwander, H., and Marvin, H.: Treatment of Carcinoma of the Human Breast with Testosterone Propionate: A Report of Five Cases, ibid. **7**: 423, 1947. Adair, F. E.: The Use of the Male Sex Hormone in Women with Breast Cancer, Surg., Gynec. & Obst. **84**: 719, 1947. (*b*) Herrmann, J. B.; Adair, F. E., and Woodard, H. Q.: The Use of Testosterone Propionate in the Treatment of Advanced Carcinoma of the Female Breast: II. The Treatment of Osseous Metastases, Surgery **22**: 101, 1947. (*c*) Van Luin, J. J.: De behandling van carcinoom metastases met testosteron propionate, Nederl. tijdschr. v. geneesk. **91**: 2834, 1947. Jones, H. W.: Testosterone in the Treatment of Advanced Breast Cancer: A Preliminary Report, South. M. J. **41**: 4, 1948. Klass, A.: Testosterone Propionate in the Treatment of Pulmonary Metastases from Breast Cancer: Report of a Case, Canad. M. A. J. **58**: 66, 1948. Davison, T. C., and Le Hon, A. H.: Testosterone in Far Advanced Breast Cancer: Preliminary Report, South. Surgeon **14**: 170, 1948. Cutler, M., and Schlemenson, M.: Treatment of Advanced Mammary Cancer with Testosterone, J. A. M. A. **138**: 187 (Jan. 17) 1948. Lee, G. Q.: Testosterone for Metastatic Breast Carcinoma, Bull. Alexander Blain Hosp. **7**: 54, 1948.

[7] Estrogens and Androgens in Mammary Cancer, report of the Council on Pharmacy and Chemistry, J. A. M. A. **135**: 987 (Nov. 27) 1947.

[8] Haddow, A.; Watkinson, J. M.; Paterson, E., and Koller, P. C.: Influence of Synthetic Oestrogens upon Advanced Malignant Disease, Brit. M. J. **2**: 393, 1944.

[9] Ellis, F., and others: Advanced Cases of Carcinoma of the Breast Treated by Stilbestrol, Proc. Roy. Soc. Med. **37**: 731, 1944.

[10] Nathanson, I. T.: The Effect of Stilbestrol on Advanced Cancer of the Breast, Cancer Research **6**: 484, 1946; Influence of Stilbestrol on Advanced Cancer of the Breast, J. Clin. Investigation **25**: 930, 1946.

[11] Herrmann, J. B.; Adair, F. E., and Woodard, H. Q.: Effect of Estrogenic Hormone on Advanced Carcinoma of the Female Breast, Arch. Surg. **54**: 1 (Jan.) 1947.

## CLINICAL MATERIAL AND ANATOMIC DISTRIBUTION OF METASTASES

*Age Distribution.*—Of the 105 patients, 70 were treated by intramuscular injections of androgens and 35 were given estrogens. Radiotherapy was not given to any patient during the period of this study or within a reasonable period prior to the study. The age distribution and menopausal status of the subjects is shown in table 1. It is to be noted that the patients treated with estrogens were from two to thirty-two years postmenopausal, the average being twelve years.

Table 1.—*Age Distribution and Treatment in One Hundred and Five Patients with Advanced Mammary Carcinoma Receiving Endocrine Therapy for One Month or More*

| Age | Androgen (70 Patients) |  | Estrogen (35 Patients) |
|---|---|---|---|
|  | Pre-menopausal | Post-menopausal | Post-menopausal |
| 20 to 30 | 2 | 0 | 0 |
| 30 to 40 | 10 | 4 | 0 |
| 40 to 50 | 13 | 9 | 1 |
| 50 to 60 | 3 | 22 | 14 |
| 60 to 70 | 1 | 6 | 15 |
| 70 on | 0 | 0 | 5 |
| Totals | 29 | 41 | 35 |

*Distribution of Metastases.*—The anatomic distribution of metastases in the total group at the time of admission to this study is given in table 2. Because of special interest in skeletal metastases the sites and the incidences are given in detail. All other metastatic sites, including the breast, are grouped under soft tissues.

Table 2.—*Distribution of Metastases in One Hundred and Five Patients with Advanced Mammary Carcinoma Receiving Endocrine Therapy for One Month or More*

| Location of Metastases | Incidence: Recurrent Inoperable * | Incidence: Primary Inoperable † |
|---|---|---|
| Bone | 41 | 11 |
| Pelvis | 25 | 8 |
| Lumbar vertebrae | 22 | 6 |
| Femurs | 19 | 7 |
| Ribs | 17 | 7 |
| Dorsal vertebrae | 13 | 0 |
| Skull | 8 | 2 |
| Cervical vertebrae | 3 | 7 |
| Mandible | 2 | 0 |
| Scapulas | 2 | 2 |
| Humeri | 1 | 1 |
| Radiuses | 2 | 0 |
| Sternum | 2 | 0 |
| Clavicles | 1 | 1 |
| Soft tissue | 56 | 33 |
| Breast (primary lesion) | 0 | 33 |
| Skin | 33 | 26 |
| Lymph nodes | 29 | 26 |
| Pleurae | 16 | 6 |
| Lungs | 13 | 4 |
| Liver | 7 | 1 |
| Breast (opposite) | 6 | 10 |
| Mediastinum | 3 | 0 |
| Uterus | 1 | 0 |
| Gallbladder | 1 | 0 |
| Colon | 1 | 0 |

* Seventy-two cases.
† Thirty-three cases.

Of the total, 72 patients had undergone at an antecedent date a radical mastectomy, with or without postoperative roentgen therapy, and were classified as having recurrent inoperable mammary cancer. There were ninety-seven anatomic sites of metastases in the group with about equal distribution between bone (forty-one sites) and the soft tissues (fifty-six sites). The bones which were most frequently involved were the pelvic girdle, lumbar vertebrae, femurs, ribs and dorsal vertebrae. The most frequent sites of metastases in the soft tissues were the skin, lymph nodes, pleurae and lungs. Cutaneous involvement occurred either by local recurrence or by metastasis.

Thirty-three patients had advanced mammary cancer without an antecedent operation and were classified as having primary inoperable mammary cancer. In addition to the primary mammary lesion, there were 11 incidences of metastases in bone, 26 in lymph nodes, 26 in skin and 10 in the opposite breast.

## CLINICAL RESULTS WITH ANDROGENS

*Dose.*—Synthetic androgenic substance was administered regularly as testosterone propionate,[12] 100 mg. intramuscularly three times a week, to 70 patients for periods of one month or longer. As shown in chart 1, the number of patients who continued therapy decreased rapidly, so that 50 per cent received treatment for less than five months. The maximum cumulative dose was 19,600 mg. of testosterone propionate.

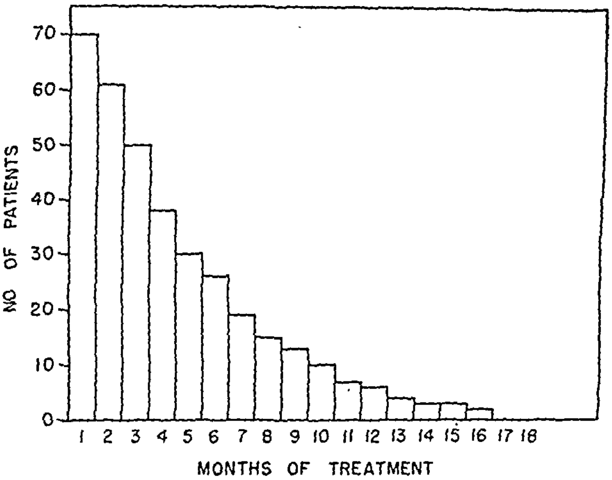

Chart 1.—Number of patients continuing on androgen therapy (testosterone propionate 300 mg. a week intramuscularly) for one month or more.

*Objective Changes.*—A critical appraisal of the clinical results, based on objective changes, is shown in table 3. The term objective improvement in osseous metastases is applied to radiographic changes, such as calcification of osteolytic lesions, apparent reformation of bone and healing of pathologic fractures, without an increase in the size or number of the lesions. In histologically confirmed lesions of soft tissue, such as the breast, skin or lymph nodes, objective improvement is indicated by a significant measurable decrease in the size of the lesion and by healing of ulcers. Favorable changes in histologically proved metastases in the pleurae, liver and uterus are based on clinical, radiographic and laboratory data which apply to the individual patient.

By these criteria objective improvement, as recorded in table 3, occurred in 19 per cent of 48 patients with skeletal metastases. No change was present in 23 per cent, while there was definite evidence of progression at an apparently unaltered rate in 39 per cent. The data were inconclusive in 19 per cent. Specific sites of skeletal improvement had a wide variation. Thus, of 29 lesions involving the bones of the pelvis 7 were improved, while only one of 23 involving the femurs responded favorably.

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[12] Supplied by the Schering Corporation as oreton.®

Objective improvement occurred in 15 per cent of 54 patients with soft tissue metastases. No change was present in 26 per cent, while there was progression at an apparently unaltered rate in 48 per cent. The data were inconclusive in 11 per cent. In 4 of 27 incidences of cutaneous involvement significant decreases in size occurred, but none of 14 mammary lesions was improved. Although the clinical evaluation of metastases in lymph nodes is inaccurate, attempts were made to determine measurable changes in palpable lymph nodes. Decreases in size of nodes were not uncommon. However, of 10 nodes which were proved by aspiration biopsy to contain metastatic cancer, 3 underwent a significant decrease in size. Improvement, admittedly difficult to assess, occurred on occasion in the pleurae, liver and uterus.

Of particular interest was the appearance of additional lesions during the time of treatment. Thus, osseous metastases developed in 4 of 16 patients who had lesions only in soft tissue prior to androgen therapy. Also, metastases appeared in soft tissues in 5 of 22 patients who had, prior to treatment, only lesions in bone. In a few patients with multiple skeletal metastases, objective improvement could be demonstrated in one site while other lesions appeared to progress.

TABLE 3.—*Distribution of Metastases and Occurrence of Objective Improvement in Seventy Patients Receiving Androgens for One Month or More*

| Location of Metastases | Incidence | Objective Improvement |
|---|---|---|
| Bone | 48 | 9 |
| Pelvis | 29 | 7 |
| Lumbar vertebrae | 27 | 3 |
| Femurs | 23 | 1 |
| Ribs | 23 | 4 |
| Dorsal vertebrae | 19 | 1 |
| Skull | 10 | 0 |
| Humeri | 4 | 0 |
| Scapulas | 3 | 0 |
| Cervical vertebrae | 3 | 1 |
| [illegible] | 2 | 0 |
| [illegible] | 1 | 0 |
| Sternum | 1 | 0 |
| Clavicles | 1 | 0 |
| Soft tissue | 54 | 8 |
| *Lymph nodes* | *32** | 3 |
| Skin | 27 | 4 |
| Breast (primary lesion) | 14 | 0 |
| Lungs | 14 | 0 |
| Pleurae | 15 | 2 |
| Breast (opposite) | 8 | 0 |
| Liver | 8 | 2 |
| Mediastinum | 2 | 0 |
| Gallbladder | 1 | 0 |
| Colon | 1 | 0 |
| Uterus | 1 | 1 |

* Of thirteen biopsies, ten were positive for metastatic cancer.

Radiographic Changes in Bone: A classification has been made of the initial radiographic appearance (osteolytic, osteoblastic and mixed) of the osseous metastases in 48 patients and of the change in the radiodensity and in the total area of osseous metastases following treatment with androgens (table 4). Since the data were not appreciably different in the premenopausal group (12 patients) and in the postmenopausal group (36 patients), the series was analyzed as a whole. The initial appearance of the osseous metastases was predominantly osteolytic in 52 per cent, osteoblastic in 13 per cent and mixed osteolytic and osteoblastic in 35 per cent of the cases. Following treatment, there was an increase in radiodensity with no change, except an occasional decrease, in the total area of involvement in 19 per cent of the cases. The initial classification in this group was either osteolytic or mixed metastases with approximately an equivalent incidence. In 6 per cent of the cases there was both an increase in the radiodensity and an increase in the total area of involvement. In 44 per cent of the cases there was a decrease in the density and an increase in the area of involvement. In 15 per cent there was no change in the density or in the size of the lesion. The data were inconclusive as to the status of the radiographic changes in 16 per cent.

TABLE 4.—*The Initial Radiographic Classification of Osseous Metastases in Forty-Eight Patients and the Changes During Treatment with Androgens*

| | | Radiographic Density | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Increase | | Decrease | | No Changes | | |
| Classification | Cases | No Increase Area | Increase Area | No Increase Area | Increase Area | No Increase Area | Increase Area | Inconclusive Data |
| Osteolytic | 25 | 5 | 0 | 0 | 10 | 7 | 0 | 3 |
| Osteoblastic | 6 | 0 | 1 | 0 | 1 | 0 | 0 | 4 |
| Mixed | 17 | 4 | 2 | 0 | 10 | 0 | 0 | 1 |
| Total | 48 | 9 | 3 | 0 | 21 | 7 | 0 | 8 |

*Total Dose of Androgens with Duration of Improvement.*—The total dose of testosterone propionate at the time of objective improvement and the duration of the improvement in 14 of 70 patients receiving the agent are given in table 5. The total dose at the time of improvement varied from 500 to 11,400 mg. of testosterone propionate. Approximately half of the doses were less than or equal to 3,000 mg. The

TABLE 5.—*Total Dose of Testosterone Propionate at Time of Objective Improvement and Duration of Objective Improvement in Fourteen Patients*

| | | Menstrual Status | | | | |
|---|---|---|---|---|---|---|
| Patient | Age | Premenopausal | Postmenopausal, Yr. | Site of Improvement | Total Dose at Time of Improvement, Mg. | Mo. of Improvement |
| C. L. | 49 | x | .. | Uterus | 1,200 | 11 |
| M. W. | 38 | .. | 2/12 | Skin | 1,200 | 10½* |
| | | | | Pelvis | 1,800 | 10* |
| A. B. | 62 | .. | 12 | Ribs | 10,800 | 9 |
| H. R. | 48 | x | .. | Liver | 500 | 7 |
| S. N. | 45 | .. | 2 | Skin | 1,200 | 7* |
| | | | | Vertebrae (lumbar) | 6,000 | 2* |
| | | | | Pelvis | 6,000 | 2* |
| | | | | Ribs | 6,000 | 2* |
| | | | | *Pleurae* | *6,000* | 2* |
| A. E. | 56 | .. | 6 | Pleurae | 11,400 | 6* |
| | | | | Pelvis | 1,800 | 5* |
| | | | | Skin | 3,600 | 3 |
| | | | | Lymph nodes | 4,200 | 3 |
| L. W. | 39 | x | .. | Skin | 1,800 | 4 |
| R. T. | 46 | x | .. | Liver | 500 | 4 |
| E. D. | 58 | .. | 6 | Ribs | 3,000 | 4 |
| | | | | Vertebrae (lumbar) | 3,000 | 4 |
| | | | | Pelvis | 3,000 | 4 |
| H. A. | 54 | .. | 17 | Pelvis | 4,800 | 4* |
| | | | | Vertebrae (lumbar) | 4,800 | 4* |
| M. P. | 52 | .. | 4 | Pelvis | 4,200 | 3* |
| D. H. | 45 | x | .. | Pelvis | 4,200 | 3 |
| E. W-H. | 66 | .. | 24 | Skull | 2,000 | 2 |
| | | | | Pleurae | 2,000 | 2 |
| | | | | Ribs | 2,000 | 2 |
| N. G. | 57 | .. | 6 | Pelvis | 5,100 | 2* |
| | | | | Ribs | 5,100 | 2* |
| | | | | Vertebrae (lumbar and cervical) | 5,100 | 2* |
| | | | | Femurs | 5,100 | 2* |

* Improvement continues at date of this writing.

objective improvement extended over a range of two to eleven months and continued in about half of the patients for four months or longer. Approximately the same incidence of objective improvement occurred in the premenopausal group, 17 per cent, as in the postmenopausal group, 22 per cent.

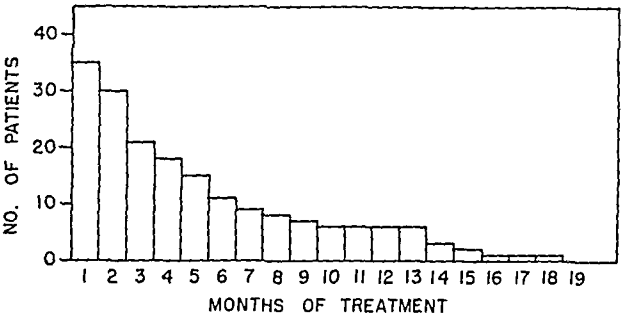

Chart 2.—Number of patients continuing on estrogen therapy for one month or more.

*Symptomatic Changes.*—The initial symptoms and the symptomatic improvement in 70 patients receiving androgens are shown in table 6. The most impressive effect was the relief of pain, which was temporarily effected in 44 of 58 patients with that initial complaint. Anorexia, general malaise and dyspnea were characteristically improved. It is clinically significant that many patients were symptomatically improved while at the same time the disease was progressive. The physical status of all patients prior to treatment was such that half of them were unable either to work or to care for their personal needs. Following treatment, the average improvement in this group was such that a majority were able to carry on essentially normal physical activity or to be gainfully employed.

## CLINICAL RESULTS WITH ESTROGENS

*Dose.*—Estrogenic substance was administered orally as diethylstilbestrol,[13] 5 mg. three times a day, to 20 patients; as ethinyl estradiol,[14] 1 mg. three times a day, to 10 patients; as estrone sulfate,[15] 10 mg. three times a day, to 4 patients. Estradiol benzoate,[16] 3.32 mg. intramuscularly three times a week, was given to 1 patient.

Table 6.—*Initial Symptoms and Incidence of Symptomatic Improvement in Seventy Patients Receiving Androgens*

| Symptom | Number of Patients with Symptom | Number of Patients with Symptomatic Improvement |
|---|---|---|
| Pain | 58 | 44 |
| Anorexia | 29 | 21 |
| General malaise | 24 | 20 |
| Dyspnea | 24 | 20 |
| Nausea | 8 | 6 |
| Cough | 3 | 1 |
| Headache | 3 | 3 |

As shown in chart 2, the number of patients that continued therapy decreased rapidly, so that 50 per cent received treatment for less than five months. The maximum cumulative dose of diethylstilbestrol was 8,910 mg.; of ethinyl estradiol, 1,198 mg., and of estrone sulfate, 3,780 mg.

*Objective Changes.*—Criteria for the estimation of objective improvement were the same as those previously given for the evaluation of those patients given androgens. The distribution of involvement in soft tissue (35 patients) and in bone (4 patients) and the incidence of objective improvement in the various sites are given in table 7. Objective improvement occurred in 23 per cent of 35 patients with involvement of soft tissue. The sites of improvement were skin, lymph nodes, primary mammary carcinoma and pleurae. Favorable effects were not demonstrated in osseous metastases. The remainder of metastases in soft tissue underwent no change in 28 per cent and progressed at a natural rate in 42 per cent. In 6 per cent the data were inconclusive. In 1 case there was an apparently accelerated growth. In 3 of the 31 patients who had lesions originally in soft tissue alone there developed metastases to bone during estrogen therapy.

*Total Dose with Duration of Improvement.*—The preparation and the total dose of estrogen at the time of objective improvement and the duration of improvement in 8 of 35 patients are given in table 8. Seven of the 8 patients who were improved received diethylstilbestrol and 1 received ethinyl estradiol. The total dose at the time of improvement varied from 210 to 1,470 mg. diethylstilbestrol, with approximately one half of the doses equal to or less than 630 mg. The objective improvement extended over a range of two to seventeen months and continued in approximately one half of the patients for seven months or longer. These patients were in the sixth to the eighth decades of life and were two to twenty-nine years past the menopause.

Table 7.—*Distribution of Metastases and Occurrence of Objective Improvement in Thirty-Five Patients Receiving Estrogens for One Month or More*

| Location of Metastases | Incidence | Objective Improvement |
|---|---|---|
| Soft tissue | 35 | 8 |
| Skin | 33 | 6 |
| Breast (primary lesion) | 23 | 1 |
| Lymph nodes | 22 | 2 |
| Breast (opposite) | 8 | 0 |
| Pleurae | 8 | 1 |
| Lungs | 6 | 0 |
| Liver | 1 | 0 |
| Mediastinum | 1 | 0 |
| Bone | 4 | 0 |
| Pelvis | 2 | 0 |
| Lumbar vertebrae | 2 | 0 |
| Femurs | 2 | 0 |
| Ribs | 2 | 0 |
| Scapulas | 1 | 0 |
| Sternum | 1 | 0 |
| Dorsal vertebrae | 1 | 0 |
| Clavicles | 1 | 0 |

*Symptomatic Changes.*—The presenting symptoms and the incidence of symptomatic improvement in 35 patients receiving estrogens are given in table 9. Pain, the commonest initial symptom, was significantly relieved in 11 of 18 patients with that complaint. Dyspnea, anorexia and general malaise were appreciably improved. The physical status of all patients prior to treatment was such that one fourth of them were unable to work or to care for their personal needs. After treatment the average improvement in this group was such that most of them were able to carry on essentially normal physical activity.

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[13] The diethylstilbestrol was supplied by Winthrop-Stearns, Inc.

[14] The Schering Corporation supplied the ethinyl estradiol as estinyl.®

[15] Ayerst, McKenna & Harrison, Ltd., supplied the estrone sulfate as premarin.®

[16] The Schering Corporation supplied estradiol benzoate as progynon-b.®

### SIDE EFFECTS AFTER ADMINISTRATION OF ESTROGENS AND ANDROGENS

The incidence of the more noticeable side effects of estrogenic and androgenic therapy are given in table 10. In some patients after the administration of androgen the edema of the lower extremities, deepened voice, increased libido, hirsutism and acne were extreme. Vaginal bleeding, which occurred in 6 of 35 patients receiving estrogen therapy, was in 4 instances due to withdrawal of estrogen rather than to continuous medication. Nausea unaccompanied by vomiting persisted in 9 patients who received estrogen, but not to the extent that treatment was interrupted. In a few instances the failure to retain estrogen because of nausea and vomiting excluded patients from the study.

Corrective measures for the undesirable side effects were generally limited in usefulness. It was possible, however, to control the peripheral edema in a majority of patients by placing them on a 0.5 Gm. sodium diet, with or without the use of mercurial diuretics. This was necessary in a few elderly patients with a poor cardiac reserve.

TABLE 8.—*Total Dose of Estrogen at Time of Objective Improvement and Duration of Objective Improvement in Eight Patients*

| Patient | Age | Post-menopausal, Yr. | Site of Improvement | Total Dose at Time of Improvement, Mg. | Months of Improvement |
|---|---|---|---|---|---|
| L. M. | 71 | 21 | Skin | 720* | 17 |
| A. K. | 73 | 27 | Skin | 420* | 17† |
| | | | Breast (primary) | 1,260* | 15† |
| E. C. | 58 | 20 | Skin | 210* | 8 |
| B. S. | 56 | 6 | Skin | 1,470* | 5 |
| L. E. | 62 | 2 | Lymph node | 1,050* | 7† |
| J. F. | 67 | 14 | Skin | 630* | 6† |
| | | | Lymph node | 630* | 6† |
| M. D. | 65 | 11 | Pleurae (right) | 336‡ | 6† |
| K. M. | 79 | 29 | Skin | 630* | 2 |

* Diethylstilbestrol.
† Improvement continues at date of this writing.
‡ Ethinyl estradiol.

There was neither clinical nor laboratory evidence in any case that either the primary or the metastatic mammary cancer had taken an accelerated course because of the androgen therapy. There was in 1 patient, aged 49 and five years past the menopause, an apparent acceleration of growth of cutaneous recurrences of mammary cancer after treatment with estrogens.

### LABORATORY STUDIES

*Blood Chemical Studies.*—In order to clarify the effect of endocrine therapy on skeletal metastases, observations were made of the calcium, inorganic phosphorus, and alkaline phosphatase in the serum of patients both with and without osseous lesions at intervals varying from two weeks to two months. Phosphorus and phosphatase were determined by Bodansky's[17] method. In normal adults the values for alkaline phosphatase found in this laboratory ranged from 1.5 to 5 units per hundred cubic centimeters. Total serum calcium was determined by the method of Kramer and Tisdale,[18] the normal range being 10 to 11.5 mg. per hundred cubic centimeters.

Because of the variability in the response of patients to endocrine therapy, it was considered important, in evaluating the changes observed, to use as large a series as possible. Hence, the following summary is based on observations both on patients in the present study and on comparable patients in the series previously reported by Hermann and co-workers.[19] About one third of the cases are from the earlier work. No patients were included who had jaundice or clearcut evidence of hepatic dysfunction, or who had recently received vitamin D, aluminum hydroxide gels or other agents likely to alter the metabolism of bone.

TABLE 9.—*Initial Symptoms and Incidence of Symptomatic Improvement in Thirty-Five Patients Receiving Estrogens*

| Symptom | Number of Patients with Symptom | Number of Patients with Symptomatic Improvement |
|---|---|---|
| Pain | 18 | 11 |
| Dyspnea | 16 | 8 |
| Anorexia | 10 | 7 |
| General malaise | 9 | 3 |
| Nausea | 2 | 0 |
| Cough | 1 | 0 |
| Headache | 1 | 1 |

Satisfactory pretreatment observations of blood chemistry were available on 103 patients, of whom 56 had roentgenographic evidence of osseous metastases. In the patients without skeletal metastases the average values for calcium, phosphorus and alkaline phosphatase were almost identical with those for normal adults. Individual variations were slightly greater than normal. Thus, 4 patients had minor elevations in phosphatase, perhaps due to unrecognized dysfunction of the liver. One patient had a definite hypercalcemia (12 mg. per hundred cubic centimeters), but this was associated with a serum protein level of 8.4 Gm., so that part of the increase in total calcium was due to an increase in the protein-bound fraction. In general, it was evident that the presence of active mammary cancer in itself had no direct effect on the calcium, phosphorus or alkaline phosphatase values of the serum.

TABLE 10.—*Physiologic and Other Changes in Patients Receiving Endocrine Therapy*

| | Androgen | Estrogen |
|---|---|---|
| Number of patients | 70 | 35 |
| Increased weight | 47 | 18 |
| Edema of lower extremities | 20 | 13 |
| Vocal changes | 23 | 0 |
| Increased libido | 13 | 0 |
| Nausea | 0 | 9 |
| Skin | | |
| Hirsutism | 24 | 0 |
| Acne | 9 | 0 |
| Urticaria | 0 | 1 |
| Breasts | | |
| Areolar pigmentation | 0 | 14 |
| Enlargement | 0 | 3 |
| Atrophy | 3 | 0 |
| Uterus | | |
| Enlargement | 0 | 7 |
| Bleeding | 0 | 6 |
| Cessation of menses | 29 | 0 |
| Enlarged clitoris | 20 | 0 |

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[17] Bodansky, A.: Phosphatase Studies: II. Determination of Serum Phosphatase; Factors Influencing the Accuracy of the Determination, J. Biol. Chem. **101**: 93, 1933.

[18] Kramer, B., and Tisdale, F. F.: A Simple Technique for the Determination of Calcium and Magnesium in Small Amounts of Serum, J. Biol. Chem. **47**: 475, 1921.

[19] Footnotes 6 b and 11.

In the patients with osseous metastases the average values for the calcium and alkaline phosphatase of the serum were above normal. There was a definite elevation of the alkaline phosphatase level in 26 patients, or 46 per cent of the total, although extremely high readings were not found, and only 4 patients had values above 10 units per hundred cubic centimeters. Definite hypercalcemia was found in 13, or 23 per cent, of the patients with osseous metastases, the highest reading being 15.5 mg. per hundred cubic centimeters. Unusual elevations in calcium and phosphatase values were not observed simultaneously in the same patient, but smaller changes frequently occurred together.

In the absence of hepatic disease an increase in the serum alkaline phosphatase indicates an increase in osteoblastic activity. Elevations in the total serum calcium may occur after the administration of large amounts of vitamin D or its analogues, in the presence of pronounced hyperproteinemia, in primary or secondary hyperparathyroidism even without osseous disease and possibly in some other uncommon metabolic disturbances. If these are excluded, hypercalcemia in a patient with disease of the bone indicates that osteolysis is proceeding so rapidly as to exceed the capacity of the kidney to excrete calcium. In the patients in this series the metastatic lesions in the bones were predominantly osteolytic, although areas of new bone formation could also be found in many cases. A study of the abnormalities in the chemistry of the blood of our patients prior to the institution of treatment makes it appear that the presence of metastatic deposits of mammary cancer in bone stimulates an osteoblastic response in about half of the cases. When the osteoblastic response is lacking or inadequate, osteolysis occurs. When the metastatic tumor in the bone is growing rapidly, osteolysis may be sufficiently intense to cause hypercalcemia, especially if the opposing response of the osteoblasts is feeble.

Table 11.—*Changes in Blood Chemical Values During the First Three Months of Treatment*

| | | | | Phosphatase | | | | | | Phosphorus | | | | | | Calcium | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Rose | | Unchanged | | Fell | | Rose | | Unchanged | | Fell | | Rose | | Unchanged | | Fell | |
| | No. Cases | Bone Met. | Initial Value | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Testosterone propionate.. | 48 | Present | Normal | 20 | 69 | 9 | 31 | 0 | 0 | 1 | 2 | 17 | 49 | 17 | 49 | 1 | 4 | 23 | 88 | 2 | 8 |
| | | | High | 10 | 53 | 3 | 16 | 6 | 31 | 3 | 23 | 1 | 8 | 9 | 69 | 2 | 10 | 4 | 19 | 15 | 71 |
| | 15 | Absent | Normal | 0 | 0 | 14 | 100 | 0 | 0 | 0 | 0 | 7 | 54 | 6 | 46 | 0 | 0 | 13 | 93 | 1 | 7 |
| | | | High | 0 | 0 | 0 | 0 | 1 | .. | 0 | 0 | 0 | 0 | 1 | .. | 0 | 0 | 0 | 0 | 1 | .. |
| Ethinyl estradiol.......... | 18 | Absent | Normal | 1 | 7 | 13 | 93 | 0 | 0 | 0 | 0 | 6 | 33 | 12 | 67 | 1 | 6 | 15 | 83 | 2 | 11 |
| | | | High | 1 | .. | 0 | 0 | 2 | .. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Satisfactory observations of serum calcium, phosphorus and alkaline phosphatase values were available for one or more months following the institution of endocrine therapy in 92 patients. Of these the number with osseous metastases treated with ethinyl estradiol and the numbers with or without osseous metastases treated with diethylstilbestrol were too small to summarize. The observations on 48 patients with osseous metastases and 15 patients without osseous metastases who were treated with testosterone propionate and on 18 patients without osseous metastases who were treated with ethinyl estradiol are summarized in table 11.

With one exception, significant changes in the calcium and alkaline phosphatase of the serum of patients without osseous metastases were not observed during the first three months of therapy with either testosterone propionate or ethinyl estradiol. The exception was a small elevation in phosphatase which occurred six weeks after the institution of ethinyl estradiol therapy. The minor fluctuations in calcium which sometimes occurred seemed to be correlated with changes in the concentration of serum protein. It appeared that these endocrine substances in the doses employed seldom if ever had a direct effect on the serum calcium and alkaline phosphatase.

There was a rise in the serum alkaline phosphatase in 30, or 63 per cent, of the 48 patients with osseous metastases during the first three months of treatment with testosterone propionate. The rise was often associated with an increase in the degree of osteoplasia of the bone lesions, but was not closely correlated with evidence of either healing or progression of the lesions. In the patients who were followed for longer periods there was a tendency for the serum alkaline phosphatase to revert to pretreatment levels after about four months of continued testosterone propionate therapy, regardless of whether or not the disease showed renewed activity. The possible significance of this rise in serum alkaline phosphatase during the first three months of various types of endocrine therapy has been discussed by one of us elsewhere.[20] Results in the present study tend to confirm our previous belief that some types of endocrine therapy stimulate osteoblastic activity in injured bone. Such stimulation is not directly related to the response of the metastatic tumor. It is of clinical significance in that it tends to check osteolysis and reduce the danger of pathologic fracture.

Of the 21 patients with osseous metastases who showed a pretreatment hypercalcemia, 15, or 71 per cent, showed a significant drop in serum calcium during the first three months of treatment with testosterone propionate. This fall in serum calcium was usually associated with evidence of a decrease in the rate of osteolysis, either because osteolytic lesions ceased to grow or because they were converted to osteoplastic ones. In this series no patient with osseous metastases was seen in whom there was definite evidence that the institution of testosterone propionate therapy caused an exacerbation of the disease with accompanying hypercalcemia such as occurred in the 3 patients described in a previous paper.[3]

There was a significant fall in the serum inorganic phosphorus in 45, or 56 per cent, of the 81 patients treated with either testosterone propionate or ethinyl estradiol. Patients with osteolytic metastases occasionally have a hyperphosphatemia for the same reason that they exhibit hypercalcemia; that is, because large amounts of calcium and inorganic phosphorus enter the circulation from the bones. In such patients a fall in serum phosphorus during endocrine therapy might be due solely to a reduction in the rate of osteolysis. In this series, however, patients without osseous metastases manifested a drop in serum phosphorus almost as frequently as those with osseous metastases. The fall in phosphorus is therefore not due solely to an effect of treatment on metastatic tumor. Such a fall in phosphorus has been reported by one of us [20] to occur in patients with carcinoma of the prostate during treatment with diethylstilbestrol, but not after surgical castration. Nathanson [21] has observed it in women during diethylstilbestrol therapy. At present there are not sufficient data to show whether there is a correlation between the fall in serum phosphorus and the clinical response during endocrine therapy.

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[20] Woodard, H. Q., and Dean, A. L.: The Significance of Phosphatase Findings in Carcinoma of the Prostate, J. Urol. 57: 158, 1947.

*Histologic and Histochemical Studies.*—Primary Mammary Cancer: The histologic classification of the mammary carcinoma in the 105 cases was as follows: carcinoma of mammary ducts, 59; carcinoma of the mammary lobules, 1; carcinoma simplex of the nipple, 1; sweat gland carcinoma, 1; metastatic mammary carcinoma, 33, and unclassified mammary carcinoma, 10.

Tissue for histologic and histochemical study was taken from the primary mammary carcinoma and from representative metastatic lesions in the skin and the lymph nodes and, in special instances, in the uterus, the liver, the bones, the pleurae and the peritoneum. Aside from routine procedures, the staining technics of Giemsa, Unna-Pappenheim and Van Gieson were applied.[22] In addition, a histochemical investigation was made of the distribution of three constituents which, under centain conditions, may be important in cell growth: nucleic acids,[23] high polymeric sulfuric acid esthers [24] and phosphatase enzymes.[25] In all, 74 cases were studied. Twenty had had satisfactory studies both prior to and during treatment, and in 8 of these, observations were made on regressing cutaneous metastases. Within the limits of this small series two changes, which have seldom occurred to an unusual degree, were as follows: (1) degenerative changes in the nucleus and the cytoplasm of the cancer cells and (2) fibroblastic proliferation and sclerosis of the connective tissue. The results were not conclusive in determining whether the changes differed in degree, if not in kind, from those which may occur spontaneously.

Exfoliating Vaginal Mucosa: Cytologic studies, using the method of Papanicolaou,[26] have been made of the vaginal smears in practically all instances prior to treatment and at weekly or biweekly intervals thereafter. The smears have been classified according to the ratios of the following epithelial cell types: acidophilic superficial squamous; basophilic superficial squamous, and intermediate and outer basal types. In the postmenopausal group, prior to treatment, 60 per cent of the smears contained nearly all basophilic squamous cells, 14 per cent had some acidophilic squamous cells and 26 per cent had some basal type cells. In the premenopausal group prior to treatment, 62 per cent of the smears contained nearly all basophilic squamous cells and 38 per cent of the smears had some acidophilic squamous cells.

After one month of treatment with testosterone propionate, the smears of both the premenopausal group and the postmenopausal group contained relatively more of the basal cells and few acidophilic squamous cells. There was little change in the second month of treatment, but there was a tendency toward a more frequent occurrence of acidophilic squamous cells. In individual cases the increased acidophilia in the smear became apparent during subsequent months of treatment, but this was not evident in the distributional analysis of the group as a whole.

After one month of treatment with estrogens the smears (all from postmenopausal women) contained relatively more of the acidophilic squamous cells, but there was no preponderance of smears with all acidophilic squamous cells. There was a rare smear with basal cells. There was little change in the second month of treatment. In individual cases a tendency toward increased basophilia in the smear became apparent during subsequent months of treatment, but this was not evident in the distributional analysis of the group as a whole.

There was no obvious relation between the initial cytologic appearance of the smear or the subsequent changes and the presence or absence of hepatic dysfunction as revealed in a study of 37 of these patients.

Cervical and Uterine Mucosa: A histochemical study (to be published elsewhere) was made of the glycogen content (Best's carmine method) [22] and the alkaline phosphatase activity (Gomori's method) [25a] in the cervical biopsies of 74 patients and in the endometrial curettings of 51 patients. In the stratified squamous epithelium of the cervix, the phosphatase activity, which was negligible, did not change whereas the cytoplasmic glycogen content either increased or remained elevated in one half of the cases after either androgen or estrogen therapy. In the glandular epithelium of the endometrium, the glycogen content did not change in either case, whereas the cytoplasmic phosphatase activity was slightly increased after the administration of estrogens.[27]

*Studies of Hepatic Function.*—The results of a study of the hepatic function (serum bilirubin, sulfobromophthalein sodium excretion, hippuric acid synthesis, thymol turbidity and cephalin flocculation) in 37 patients in this group, 6 of whom presented clinical evidence of hepatic disease, have been recently reported by Tagnon and Trunnell.[28]

Fifteen patients, or 41 per cent, had diminished hepatic function in two or more tests. For comparison, similar tests were made on 27 patients with primary operable mammary carcinoma and 27 apparently normal women of comparable ages. Six patients, or 21 per cent, of each group had abnormal values in two or more tests.

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[21] Nathanson, I. T.: Personal communication to the author.

[22] Mallory, F. B.: Pathological Technique, Philadelphia, W. B. Saunders Company, 1938.

[23] Caspersson, T., and Santesson, L.: Studies on Protein Metabolism in the Cells of Epithelial Tumors, Acta radiol., 1942, supp. 46, p. 1.

[24] Lison, L.: Histochimie Animale, Paris, Gauthier-Villars, 1936, p. 236. Sylven, B.: Über das Vorkommen von hochmolekularen Esterschwefelsauren im Granulationsgewebe und bei der Epithelregeneration, Acta chir. Scandinav. (supp. 66) **86**: 1, 1941.

[25] (*a*) Gomori, G.: Microtechnical Demonstration of Phosphatase in Tissue Sections, Proc. Soc. Exper. Biol. & Med. **42**: 23, 1939. (*b*) Bodian, D., and Mellors, R. G.: The Regenerative Cycle of Motorneurons, with Special Reference to Phosphatase Activity, J. Exper. Med. **81**: 469, 1945.

[26] Papanicolaou, G. N.: The Sexual Cycle in the Human Female as Revealed by Vaginal Smears, Am. J. Anat. **52**: 519, 1933.

[27] Atkinson, W. B., and Engle, E. T.: Studies in Endometrial Alkaline Phosphatase During the Human Menstrual Cycle and in the Hormone-Treated Monkey, Endocrinology **40**: 327, 1947.

[28] Tagnon, H. J., and Trunnell, J. B.: Studies of Liver Function in Patients Having Cancer of the Breast, Cancer **1**: 472, 1948.

*Hemoglobin.*—The hemoglobin concentration of the peripheral blood in 15 patients with metastases to bone or soft tissue, after androgen therapy for an average of seven months, increased from an initial value of 12.6 Gm. to a value of 15.9 Gm. per hundred cubic centimeters, an average increase of 26 per cent. In a third of these cases the average increase was 40 per cent or more. In 2 patients the increment was more than 100 per cent, and in 2 patients the hemoglobin concentration rose to 19.7 Gm. per hundred cubic centimeters.

*Terminal Observations.*—Of 105 reported cases, 55 have terminated in death. Analysis of the immediate cause of death revealed that metastatic cancer was directly responsible in 34 (62 per cent), noncancerous systemic disease in 14 (25 per cent) and undetermined causes in 7 (13 per cent). Postmortem examinations were performed in 17 instances.[29] Active mammary carcinoma was found in every case. Areas of metastases determined clinically were all confirmed by the necropsy and, in addition, clinically undiagnosed areas of metastases were found in all cases. At necropsy the distribution and the incidence of the three most common extraskeletal metastases were as follows: pulmonary, 82 per cent; hepatic, 82 per cent, and cerebral, 41 per cent. Skeletal metastases were present in 82 per cent.

## SUMMARY AND CONCLUSION

*Clinical Results.*—One hundred and five female patients with advanced inoperable mammary carcinoma were treated with endocrine substances for one month or longer.

Testosterone propionate, 100 mg. intramuscularly three times a week, was given to 70 patients with metastases to bone, soft tissue or both. Objective improvement occurred in 19 per cent of 48 patients with skeletal metastases and in 15 per cent of 54 patients with extraskeletal metastases. The cumulative dose at the time of improvement varied from 500 to 11,400 mg. of testosterone propionate, and approximately half of these doses were less than, or equal to, 3,000 mg. The objective improvement extended over a range of two to eleven months and continued in one half of the patients for four months or longer. Approximately the same incidence of objective improvement occurred in the premenopausal group as in the postmenopausal group. The most impressive symptomatic effect was the relief of pain, which was temporarily effected in 44 of 58 patients with that initial complaint. It is clinically significant that many patients were symptomatically improved even though at the same time the disease was progressive.

Estrogenic substances (diethylstilbestrol, ethinyl estradiol and estrone sulfate) were given to 35 patients. Objective improvement occurred in 23 per cent of 35 patients with extraskeletal metastases. The sites of improvement were the skin, lymph nodes, primary mammary carcinoma and pleurae. No favorable effects were observed in osseous metastases. With diethylstilbestrol the cumulative dose at the time of improvement varied from 210 to 1,470 mg. with approximately one half of these doses equal to, or less than, 630 mg. The objective improvement extended over a range of two to seventeen months and continued in about one half of the patients for seven months or longer. These patients were in the sixth to the eighth decades of life and were two to twenty-nine years past the menopause. Pain, the commonest initial symptom, was significantly relieved in 11 of 18 patients with that complaint.

The more noticeable side effects after the administration of androgens were an increase in weight, edema of the lower extremities, deepened voice, hirsutism and acne. Vaginal bleeding, which occurred in 6 of 35 patients receiving estrogen therapy, was in 4 instances due to estrogen withdrawal rather than to continuous medication. There was neither clinical nor laboratory evidence in any case that either the primary or the metastatic mammary cancer had taken an accelerated course because of the androgen therapy. There was an acceleration of growth of mammary cancer in 1 patient, aged 49, after treatment with estrogens.

*Laboratory Results.*—Determinations of the calcium, inorganic phosphorus and alkaline phosphatase of the serum were made before and during treatment of patients with testosterone propionate or ethinyl estradiol. Prior to the institution of endocrine therapy, only minor and occasional abnormalities were observed in the blood chemical studies of the patients without osseous metastases. Of the patients with osseous metastases, 46 per cent had elevations in serum alkaline phosphatase and 23 per cent had elevations in serum calcium.

During the first three months of treatment with testosterone propionate, 63 per cent of the patients with osseous metastases had an increase in serum alkaline phosphatase above pretreatment levels. The alkaline phosphatase in the serum of these patients tended to fall later in the course of therapy. Conspicuous changes in the alkaline phosphatase of the serum of patients without osseous metastases were not observed during treatment with either testosterone propionate or ethinyl estradiol. Of the patients with osseous metastases who had a pretreatment hypercalcemia, 71 per cent had a decrease in serum calcium early in the course of treatment with testosterone propionate. The serum inorganic phosphorus of 56 per cent of all patients treated with either testosterone propionate or ethinyl estradiol decreased significantly during therapy.

Within the limits of a small series of histologic and histochemical observations on regressing cutaneous metastases two changes, which seldom occurred to an unusual degree, were as follows: (1) degenerative changes in the nucleus and the cytoplasm of the cancer cells and (2) fibroblastic proliferation and sclerosis of the connective tissue.

In general, cytologic changes of the exfoliating vaginal mucosa were temporarily in the anticipated direction of basophilia after androgen administration and acidophilia after estrogen administration.

In the stratified squamous epithelium of the cervix the cytoplasmic glycogen content either increased or remained elevated in one half of the cases during androgen or estrogen therapy.

In 15 patients who had received testosterone propionate for an average of seven months the hemoglobin concentration of the peripheral blood increased from an average initial value of 12.6 Gm. to a value of 15.9 Gm. per hundred cubic centimeters.

Postmortem examinations were made of 17 of 55 patients now deceased. Active mammary carcinoma was found in each case.

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[29] Eleven were done by the Department of Pathology, Montefiore Hospital, New York.

# POSTABORTAL OLIGURIA

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Renal insufficiency as a complication of pregnancy, and particularly of abortion, has long attracted serious consideration. At necropsy the organs of fatal cases in this group are found with morphologic features in common; and there is a constant relationship between the clinical syndrome and these structural changes. Comparison of this relationship with that resulting from other causes has made possible a more complete explanation of postabortal oliguria.

Bywaters and Beall[1] in 1941 activated interest in the clinical-pathologic picture which followed crush injuries sustained in the London air raids. The triad of crushing injury, subsequent renal failure and histopathologic alterations in the kidneys focused the attention of clinicians and pathologists on this disease entity, which they called the crush syndrome. The onset of symptoms[2] follows in the wake of crushing trauma or other precipitating factors with or without evidence of shock. Nausea, vomiting, malaise and abdominal pain are usually present, but the most ominous sign is renal failure. This may develop insidiously or abruptly and is made evident by oliguria or even anuria, with a rapid rise in nonprotein nitrogenous products in the blood. Hypertension, acidosis and edema may accompany the renal shutdown.

Laboratory studies generally reveal the urine to be acid in reaction, of low specific gravity, dark brown or smoky in appearance and to contain hyaline, leukocytic or granular casts. Frequently a positive reaction to the benzidine test is obtained. Patients in whom these observations are made usually die within twenty days of the onset; the majority succumb within ten days. Pulmonary edema or potassium intoxication are frequent terminal complications.

Bywaters and Beall[1] described the renal lesion as consisting of retrogressive changes in the ascending loop of Henle and the second convoluted tubule with the presence of brown (myohemoglobin) casts in the distal tubular apparatus. Lucké[3] and Mallory[4] contributed many etiologic agents to the rapidly growing list of precipitating causes. Among these are: transfusion reaction of incompatible blood, hemolytic anemia, various poisons, thermal and chemical burns, hemoglobinuric fever, heat stroke, anoxia, high altitude, sulfonamide sensitivity, mushroom poisoning, uteroplacental apoplexy, severe streptococcic infection and infantile diarrhea. More recently others[5] have added nontraumatic ischemia of muscle, pyloric stenosis, infectious hepatitis, operations on the biliary tract and abortion.

Lucké[3] considered lower nephron syndrome an appropriate designation for this clinical-pathologic association, since the presenting anatomic alterations occurred in the lower or more distal aspects of the nephron. The morphologic features, as reviewed by him and by Mallory,[4] consist essentially of degenerative changes and necrosis in the distal convoluted tubules and the deposition of heme (pigmented) casts in the distal and collecting tubules. In addition, there may be seen hyaline casts, herniation of tubules, necrosis and exfoliation of tubular epithelial cells, regeneration of epithelium, precipitation of eosinophilic amorphic material in the glomerular spaces, interstitial edema and exudation of inflammatory cells most prominent at the corticomedullary junction.

Recent literature[6] concerning hepatic dysfunction in the lower nephron syndrome explains central and midzonal necrosis as the result of anoxia.

## REVIEW OF LITERATURE

Until recent years renal failure attendant on pregnancy or abortion often was ascribed to extensive necrosis of the renal cortex. This lesion was the subject of a comprehensive review by Duff and Murray[7] in 1941. They were able to collect 71 cases of symmetric cortical necrosis of the kidneys, 48 of which were associated with pregnancy. It is interesting to note that of the 36 cases in which the month of termination of gestation was listed, only 2 were as early as the fourth month. They found that renal failure usually developed between the fifth and eighth months of pregnancy. Further study showed that there was usually an underlying obstetric complication. In 21 cases it was premature separation of the placenta and in 8 it was preeclamptic toxemia.

In analyzing the clinical course of renal cortical necrosis Duff and Murray[7] found that the onset was usually marked by extreme oliguria or anuria. Other complaints were headache, abdominal pain and, frequently, edema of dependent parts. The urine might be grossly bloody or red blood cells were found microscopically, associated with albumin and hyaline or granular casts. There was retention of nonprotein nitrogenous products varying from 85 to 356 mg. per hundred cubic centimeters. The patients were febrile but maintained mental clarity until a day or two before death.

Duff and Murray[7] described the renal cortical necrosis as of varying degrees of severity, with the most advanced lesions involving the entire cortex. The lesion was believed to be due to ischemia. The vascular changes were thought to be localized in the intralobular arteries and efferent arterioles and to follow a sequence of vasospasm to vasoparalysis frequently associated with thrombosis. As to pathogenesis, the authors postulated a circulating toxic substance, possibly of placental origin, which initiates the derangement in sensitive vascular structures.

A report by Dunn and Montgomery[8] (1941) added 15 more cases of fatal destructive lesions in the renal cortices, 7 of which involved pregnant patients. Six of the 7 had preeclamptic toxemia with either antepartum bleeding or retroplacental hemorrhage. The oliguria lasted from two to seven days.

All these studies had dealt with renal dysfunction in connection with obstetric accidents as related to symmetric necrosis of the kidney. After the crush syndrome had been described, the first association between accidents of pregnancy and lower nephron nephrosis was established by Young and McMichael[9] (1941) who reported 2 cases of renal failure after severe labor. In both patients there developed urinary suppression

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[1] Bywaters, E. G. L., and Beall, D.: Crush Injuries with Impairment of Renal Function, Brit. M. J. **1:** 427-432 (March 22) 1941.

[2] Strauss, M. B.: Acute Renal Insufficiency Due to Lower Nephron Nephrosis, New England J. Med. **239:** 693-700 (Nov. 4) 1948.

[3] Lucké, B.: Lower Nephron Nephrosis, Mil. Surgeon **99:** 371-396 (Nov.) 1946.

[4] Mallory, T. B.: Hemoglobinuric Nephrosis in Traumatic Shock, Am. J. Clin. Path. **17:** 427-443 (June) 1947.

[5] Humphrey, J. H., and Jones, F. A.: Oliguria After Abortion, Clin. Sc. **6:** 173-186 (July) 1947.

[6] Bywaters, E. G. L.: Anatomical Changes in the Liver After Trauma, Clin. Sc. **6:** 19-40 (Oct.) 1946.

[7] Duff, G. L., and Murray, E. G. D.: Bilateral Cortical Necrosis of the Kidneys, Am. J. M. Sc. **201:** 428-450 (March) 1941.

[8] Dunn, J. S., and Montgomery, G. L.: Acute Necrotising Glomerulonephritis, J. Path. & Bact. **52:** 1-16 (Jan.) 1941.

[9] Young, J., and McMichael, J.: "Crush Syndrome" in Obstetrics, Brit. M. J. **2:** 887 (Dec. 20) 1941.

and an elevated blood urea level after delivery. One case was fatal, and the histopathologic observations were similar to those of the crush syndrome. Developing an analogy with the crush syndrome, they postulated that a toxin liberated from the injured pelvic soft tissues precipitated renal failure.

Young[10] related a second obstetric problem to the lower nephron syndrome through the common factor of tissue destruction. He found this syndrome to occur in some cases in which there was concealed hemorrhage associated with premature separation of the placenta. Fifty-nine consecutive cases of obstetric hemorrhage with shock (postpartum hemorrhage, placenta previa and premature separation of the placenta) required blood transfusions. Only 5 in the 10 associated with premature placental separation manifested renal impairment. Young concluded that impaired renal function was not due to the shock of hemorrhage. In 79 cases of premature placental separation later in pregnancy renal impairment did not occur in the revealed hemorrhagic variety, but in 25 per cent of the concealed hemorrhagic type there was renal dysfunction. In 3 of the 4 fatal cases in this series, renal findings compatible with the crush syndrome were demonstrated. Thus Young further elaborated the idea that renal failure was determined by a massive uteroplacental lesion of ischemic origin from which a hypothetic nephrotoxic substance was liberated to effect tubular degeneration and azotemia.

Paxson, Golub and Hunter[11] have reported their experience with renal failure and obstetric conditions. In 1 fatal case lower nephron nephrosis was observed in conjunction with premature placental separation and retroplacental hematoma.

The first report pertinent to my observations on postabortal oliguria was by Bratton[12] (1941), who described 8 fatal cases not associated with blood transfusions in women who had septic abortions. The renal lesions were similar to those observed in the crush syndrome. Three of their 8 patients had anuria and 2 of the remaining 5 had blood urea determinations of 423 and 420 mg. per hundred cubic centimeters. In addition, 5 of the 8 patients exhibited some degree of metritis at necropsy. Bratton[12] concluded that the renal changes were probably toxic in origin but not necessarily puerperal, since anuria might have preceded the abortion.

At a later date, Young[10] had opportunity to review the clinical records of Bratton's[12] cases and concluded that in the 3 cases with anuria this difficulty was subsequent to premature separation of the placenta at about the twenty-sixth to twenty-eighth week of pregnancy. In 1 of the remaining cases the patient suffered from retroplacental hemorrhage and eclampsia at the thirtieth week of pregnancy. This further analysis leaves the possibility that anuria in 4 cases was associated with abortion and was not a complication of other obstetric accidents. Unfortunately, Bratton did not give detailed histories for his cases and subsequent investigators have suggested the possibility of drug ingestion by his patients.

Dingle[13] (1943) added 2 more cases in which renal failure occurred following abortion. Both patients were in the sixth month of pregnancy and after the abortion they experienced a drop in blood pressure with a state of shock ensuing. Later, hematuria, oliguria and retention of nonprotein nitrogenous products developed. The first patient, aged 31 and with severe toxemia of pregnancy, yielded 10 ounces (284 cc.) of dark brown urine prior to induced delivery of the fetus. She died on the eighth day. Necropsy disclosed complete necrosis of the renal cortices.

The second patient was thought to have a traumatic premature separation of the placenta and, subsequent to the abortion, hematuria, shock and azotemia (blood urea level 356 mg. per hundred cubic centimeters) developed. After a stormy course of ten days, diuresis was established and the patient recovered.

It appears that the first case was another instance of cortical necrosis complicating pregnancy, but the second case may be an example of lower nephron nephrosis subsequent to retroplacental hemorrhage as described by Young.[10] The obstetric accidents were miscarriages due to toxemia or premature separation.

A further study of renal failure after abortion was made by O'Sullivan and Spitzer[14] (1946). They analyzed 6 cases of acute renal failure after incomplete abortion. The first case was that of a girl aged 19 (period of gestation not given) who had mild pyrexia and an offensive hemorrhagic vaginal discharge. Three days after admission, digital removal of necrotic placental tissue was performed with the patient under intravenous thiopental sodium anesthesia. Four days later, oliguria developed and the blood urea determination rose to 320 mg. per hundred cubic centimeters. Death occurred on the seventeenth hospital day. Bywaters[14] examined the autopsy material and believed the renal findings to be compatible with the crush syndrome. Even though the patient had received chemotherapy and whole blood transfusions, he considered these lesions to be the result of septic abortion.

O'Sullivan and Spitzer[14] presented a second case of inevitable abortion in a secundigravida 45 years of age who was approximately twenty-four weeks pregnant. After the abortion, oliguria developed, and the patient died three days later. Autopsy observations were those of symmetric necrosis of the kidneys. In 2 additional cases of oliguria complicating abortion the patients survived. One patient had oliguria after abortion, but it was ascribed to a transfusion reaction due to incompatible blood.

Humphrey and Jones[5] have recently described 4 cases in which extreme oliguria occurred after incomplete abortion at about sixteen weeks of pregnancy. Symptoms consisted of headache, vomiting and anemia, with hemoglobin varying from 5.5 to 10.6 Gm. per hundred cubic centimeters. Urinary suppression persisted from four to fourteen days, with blood urea determinations ranging from 350 to 550 mg. Diuresis was established and all 4 patients survived. In each instance therapeutic operative evacuation of the uterus was performed under anesthesia.

Finally, it seems advisable to include a case reported by Terplan and Javert[15] (1936) to associate the lower nephron syndrome as a possible complication of quinine poisoning in pregnancy. A woman aged 41, three months pregnant, received a proprietary remedy containing quinine. She experienced vaginal bleeding, anorexia, emesis and extreme prostration of several weeks' duration. The patient died with azotemia on the sixth day after hospital admission. The pathologic descriptions are similar to those in what is now considered to be the lower nephron syndrome. Three grams of quinine were recovered from the liver at autopsy. The authors concluded that the exact mechanism of quinine-induced hemoglobinuria was unknown but thought that pregnant women, particularly those with toxemic tendencies, were susceptible to its hemolytic property.

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[10] Young, J.: Renal Failure After Utero-Placental Damage, Brit. M. J. **2**: 715-718 (Dec. 19) 1942.

[11] Paxson, N. F.; Golub, L. J., and Hunter, R. M.: The Crush Syndrome in Obstetrics and Gynecology, J. A. M. A. **131**: 500-504 (June 8) 1946.

[12] Bratton, A. B.: Anuria with Casts Not Associated with Transfusion, Lancet **1**: 345-346 (March 15) 1941.

[13] Dingle, P.: Two Cases of Renal Failure Following Abortion, J. Obst. & Gynaec. Brit. Emp. **50**: 246-253 (Aug.) 1943.

[14] O'Sullivan, J. V., and Spitzer, W.: Acute Renal Failure Complicating Abortion, J. Obst. & Gynaec. Brit. Emp. **53**: 158-176 (April) 1946.

[15] Terplan, K. L., and Javert, C. T.: Fatal Hemoglobinuria with Uremia from Quinine in Early Pregnancy, J. A. M. A. **106**: 529-532 (Feb. 15) 1936.

The impression gained from the literature is that the lower nephron syndrome can be a complication of any period of gestation; however, symmetric cortical necrosis occurs almost exclusively in the latter half of pregnancy. The cortical necrotic lesion in pregnancy is a complication of other obstetric conditions; namely, premature separation of the placenta or toxemia of pregnancy. Although the lower nephron lesion also has been shown to accompany complications of the later months of pregnancy, I believe that it is an important complication of abortion itself. With some reservation, because of brief histories, I might accept 4 of Bratton's[12] cases and possibly 1 of O'Sullivan's[14] as examples of lower nephron injury subsequent to abortion. The 4 clinical cases reported by Humphrey and Jones[5] appear to illustrate recovery from this disease, although anatomic proof is lacking.

## REPORT OF CASES

The following 3 cases add further proof to the presumptive relation between abortion and lower nephron nephrosis.

CASE 1.—A white woman aged 24, estimated to be two months advanced in her third pregnancy, gave a history of abdominal cramps, urinary difficulties and vaginal bleeding with passing of clots, lasting for one week. In addition, during the forty-eight hours prior to hospital admission, there developed malaise and a tan discoloration of the skin. At the time of examination the patient was semicomatose, had a blood pressure of 120 mm. of mercury systolic and 60 mm. diastolic and a temperature of 103 F. Her urine was black and the reaction to the guaiac test for blood was positive. Other laboratory studies revealed hemoglobin of 5.5 Gm. per hundred cubic centimeters, 1,300,000 red blood cells and 28,700 white blood cells per cubic millimeter. The patient was oliguric on admission, and the urea nitrogen concentration of the blood was 131 mg. per hundred cubic centimeters. The carbon dioxide–combining capacity was 32 volumes per cent. During the hospital course of four days the total urinary output was 330 cc. Treatment with penicillin, oxygen, minimal intravenous fluids and whole blood transfusions was of no avail. On the day of death the urea nitrogen level of the blood was 235 mg.

The pertinent microscopic renal findings follow: There was pale eosinophilic material in the glomerular spaces and proximal convoluted tubules. The epithelium of the latter showed simple necrosis to a moderate degree. In the thick limb of Henle and in the distal convoluted and collecting tubules there were reddish brown to tan casts. The distal convoluted tubules presented extensive necrosis and exfoliation of epithelial elements. In addition there was early regeneration of epithelial lining cells. Slight interstitial edema and minimal scattered peritubal lymphocytic inflammatory infiltration also were found.

Pathologic diagnoses included: lower nephron syndrome; recent abortion with retained placental tissue showing acute necrotizing deciduitis and endometritis; acute parenchymatous degeneration of liver with extensive midzonal necrosis; moderate degenerative lipidosis of the liver, and acute pulmonary edema.

CASE 2.—A white woman aged 35 in her sixth pregnancy was hospitalized Oct. 26, 1939. Her last menstrual period began Aug. 28, 1939. The patient stated that she missed the menstrual period in September and, thinking herself to be pregnant, inserted slippery elm into her cervix, leaving it in place for two days. There resulted a white vaginal discharge, which became bloody on October 25 and was associated with nausea, vomiting, generalized malaise, pain in the lower part of the abdomen and, finally, chills and fever. Physical examination revealed that the patient was passing clots of blood and the uterus was slightly enlarged. A small fragment of tissue extruding from the external os was identified as placenta and removed. Jaundice was present at this time. The temperature was 102 F., and the blood pressure was 95 mm. of mercury systolic and 70 mm. of mercury diastolic. The patient was oliguric on admission, and the urine gave a 4 plus reaction to the benzidine test. The white blood cell count was 27,000 per cubic millimeter, and the hemoglobin value was 71 per cent. The patient's total output of urine during hospitalization was 340 cc. Therapy consisted of transfusions of whole blood, sulfanilamide therapy and general supportive measures. The patient died on the third hospital day, seventeen days after a self-induced abortion.

The more significant observations at necropsy were in the kidneys. Many collecting tubules contained pigmented casts in which spherical outlines persisted. In other tubules the casts were more uniform and reddish brown. Pigmented casts were seen also in the distal convoluted tubules, where the lining epithelium showed widespread simple necrosis. There was an eosinophilic precipitate in the glomerular spaces. Mild interstitial edema and scattered lymphocytic inflammatory infiltrations were limited almost exclusively to the medulla. There were signs of old chronic purulent pyelitis and hydronephrosis.

Pathologic diagnoses included: lower nephron syndrome; recent abortion with necrotizing deciduitis; septicemia (Streptococcus viridans recovered from the heart's blood at necropsy); acute parenchymatous degeneration of the liver with moderate degenerative lipidosis, and icterus.

CASE 3.—A woman aged 42 manifested a bizarre clinical picture following an early abortion. The illness was of about twelve days' duration. There was well defined oliguria, with only 300 cc. of urine being passed during this period. Jaundice was present. The attending physician thought the clinical picture compatible with an acute nephritis developing subsequent to an abortion. Etiologic factors such as quinine, sulfonamide drugs, transfusion reaction or other medicinal agents were ruled out by the history. The patient was mentally alert until about one hour before death.

In the kidneys there was an eosinophilic, finely granular precipitate in the glomerular spaces and in the lumens of the proximal convoluted tubules. Pigmented (heme) casts were found in the thick loops of Henle, in the distal convoluted tubules and most abundantly in collecting tubules. In the thick limbs of Henle's loops and in the distal convoluted tubules simple necrosis and regeneration of the epithelium were present. There was moderate interstitial edema. In the outer zone of the medulla there was a peritubular cellular infiltration of lymphocytes and a few eosinophilic leukocytes.

Pathologic diagnoses included: Recent abortion with necrotizing purulent deciduitis; lower nephron syndrome; acute parenchymatous degeneration and passive congestion of the liver, and icterus.

## COMMENT

*Points of Similarity.*—In each of the preceding cases there was an early termination of pregnancy. In none did gestation extend beyond the sixteenth week. In none was there a history of preexisting renal disease. Oliguria developed in each instance prior to the use of therapeutic measures which are admitted etiologic agents in their own right (sulfonamide drugs and whole blood transfusions). In case 1 the possibility that quinine had been taken was explored because of certain social and economic implications. Mindful of this possibility from Terplan's[15] case, the use of quinine was excluded on the basis of clinical observations and by interrogation.

The symptoms described are in accord with the usual manifestations of the crush syndrome; namely, abrupt onset, headache, malaise and vomiting. In the instances in which such information was available, there was elevation of the nonprotein nitrogen level, and in each case severe oliguria was a feature. The first patient died six days, the second four days and the third twelve days after onset of symptoms. Incomplete infected abortion was a factor in common, and an exceedingly important similarity was that septicemia developed in each patient.

Jaundice was present in 2 of the 3 patients, and the other had hepatic zonal necrosis. This fact will be considered in the pathogenesis, as will also the anemia, which appeared to be severer than could be accounted for on the basis of physiologic anemia of pregnancy or vaginal bleeding.

The morphologic aspects of the 3 cases are strikingly similar, the essential pathologic diagnosis being almost identical. The renal observations are those previously described for the crush or lower nephron syndrome with individual variations in accordance with the duration of symptoms. In the case with the longest survival there was more tubular epithelial regeneration and a greater degree of inflammatory infiltration.

The uterine observations were equally interesting. In each case there were large masses of retained decidua and of chorionic epithelium. Part of the placental tissue was necrotic and was undergoing lysis or exhibited extensive cellular inflammatory infiltrations. However, other portions of the placenta were living and bathed in maternal blood. This association of necrotic and living placenta — the latter retaining some degree of maternal circulation — may be of importance in considering the pathogenesis of this disease.

The hepatic lesions were striking and significant in view of the jaundice. In each case there was diffuse simple necrosis of hepatic cells with a decided regeneration of liver cells, hyperchromatic nuclei and multinucleated cord cells. Degenerative lipidosis was observed in the first 2 cases. In addition, the liver in case 1 showed pronounced midzonal necrosis. From general pathologic experience it appears that icterus was due to hepatocellular dysfunction produced by a toxic substance. Our observations were somewhat different from those of Bywaters,[6] who found mitotic activity and central and midzonal necrosis with small intracellular hydropic vacuoles, occurring as soon as the sixth day after trauma. As previously stated, Bywaters explained these lesions on the basis of anoxia.

*Pathogenesis.*—The pathogenesis of the crush syndrome is not satisfactorily explained by any single hypothesis and is probably a process dependent on related forms of renal injury, received under varying conditions. Corcoran and Page,[16] in developing their concept of the genesis of this disease, considered that the mechanism of development can be divided into two phases — the first, in which the principal lesion is obstruction of the renal tubules by hemoglobin or myohemoglobin casts, and the second, in which necrosis of the renal tubular epithelium is produced. Moreover, these authors expressed their belief that hemoglobinuria and myoglobinuria are injurious only when the conditions of aciduria and oliguria are fulfilled and that tissue damage is dependent on deposition of pigment casts within the tubules. It was further postulated that myoglobin and hemoglobin may be transformed and precipitated as metaforms with subsequent release of cytotoxic hematin.

A hypothetic nephrotoxic substance has been incriminated in the crush syndrome, but it is difficult to account for such selective action (distal convoluted tubules) by a chemical substance. It seems far more logical to consider that the chemical substance is a humoral vasoconstrictor and that its mode of action is renal ischemia. The pigment casts may be thought of as products secondary to release of hemoglobin and to breaking down of erythrocytes, which pass through the altered glomerular barrier.

Regardless of postulates, renal ischemia appears to be the decisive underlying factor of the crush syndrome. Recent work by Trueta and his associates[17] has established this last concept on a firm basis through a series of experiments which yielded important anatomic and physiologic considerations. This group studied the renal circulation by angiographic and other injection methods in a series of experiments designed to simulate the crush syndrome. After prolonged application and subsequent release of a tourniquet applied to the hind leg of a rabbit, it was observed that the surface of the kidney became pale while simultaneously the stream of blood in the renal vein was intensely red. More detailed study demonstrated that the ischemia, or reduced blood flow, was more prominent in the outer cortex. These observations were interpreted as a diversion of the renal circulation from the cortex to the medulla by a short-circuiting route; it was believed that the radiopaque material followed this path as an alternative renal circulation. Additional proof of this shunt was obtained from the anatomic differences between the cortical and the medullary vascular supply as derived from the renal efferent arterioles. Similar results were obtained by stimulation of the central end of the divided sciatic nerve, and mediation of reduced cortical flow through a neurovascular mechanism could be postulated.

The experimental injection of staphylococcus toxins in animals produced equivalent results; that is, vasospasm of renal cortical arteries, diversion of the renal circulation through the medulla and, after twenty-four hours, necrosis of the cortex.

This work indicated that the oliguria or anuria due to crushing injuries results from diversion of the renal cortical circulation to a degree which lowers the intraglomerular filtration pressure. The cause could be a neurovascular mechanism dependent on humoral vasoconstrictors released from ischemic tissue, or these hypothetic chemicals might act directly on the vascular structures.

Eggleton,[18] in experimental production of the crush syndrome in the cat by prolonged ischemia, noted that rapid restoration of the circulation in the ischemic limb would depress renal function as evaluated by urea clearance determinations. If the reestablishment of the circulation was gradual, there was no reduction in urea clearance, provided that hepatic function was normal. In those experiments in which the function of the liver was eliminated (clamping of the hepatic artery just prior to gradual release of the limb), there was a depression of urea clearance comparable to that occurring after sudden release of the tourniquet. This suggested that a toxic product is formed during ischemia, which, if slowly liberated into the blood stream, can be detoxified by the intact liver, thus sparing the renal circulation. Eggleton[18] also produced an extract from ischemic muscle or undamaged normal muscle (four to ten hours after death of the animal) which depressed urea clearance when injected into animals. In explanation she quoted the work of Bergmann and Fruton[19] (1941), "who suggested the toxic material might well be an early breakdown product of protein, formed only during strict long continued anaerobiasis and never during normal aerobic protein catabolism in the cell."

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[16] Corcoran, A. C., and Page, I. H.: Crush Syndrome: Post-Traumatic Anuria: Observations on Genesis and Treatment, J. A. M. A. **134**: 436-441 (May 31) 1947.

[17] Trueta, J.; Barclay, A. E.; Daniel, P. M.; Franklin, K. J., and Prichard, M. M. L.: Studies of the Renal Circulation, Springfield Ill., Charles C Thomas, Publisher, 1947.

[18] Eggleton, M. G.: Crush Kidney Syndrome in the Cat, Lancet **2**: 208-210 (Aug. 12) 1944.

In our cases it is probable that the theoretic substances had origin in the retained placental tissue. These products may be derived from the areas of dead and dying placental tissue in various stages of lysis and may be absorbed into the circulation which persists in the living portions. Young[20] has long considered this to be the explanation of renal failure associated with retroplacental hemorrhage in premature separation of the placenta and in certain cases with eclamptic phenomena.

Since it has been demonstrated that severe septicemia can produce diversion of renal flow, as shown by Trueta's[17] staphylococcic toxin experiment, this also must be considered as a factor in the pathogenesis of oliguria in septic abortion. In this connection necrotic and partially necrotic placental tissue may serve merely as a culture medium for bacterial growth and toxin production. It is also possible that both factors—a hypothetic vasoconstrictive humoral substance from ischemic placenta and toxins from invading bacteria—might, by a synergistic effect, act on a susceptible neurovascular mechanism to produce reduced cortical flow, a result not obtainable by either acting separately. The role of bacterial toxins may be that of producing hepatic damage sufficient to produce hepatocellular dysfunction and inability to detoxify circulating placental products. These substances then would be free to act unfavorably on the kidneys. If this is the case, it constitutes a clinical application of Eggleton's[18] studies.

It is difficult to explain the anemia in case 1, which appeared to be severer than the relative anemia of pregnancy and more than that which a moderate vaginal hemorrhage would produce. This patient may have had secondary anemia prior to the abortion. However, acute hemolytic anemia is frequently observed in septicemia. In the material studied by Humphrey and Jones[5] anemia was a constant feature. However, none of their cases was complicated by generalized septicemia. There was no evidence of hemolytic activity or deposition of hemosiderin in reticuloendothelial cells in either of our first 2 cases. Nevertheless, it does not seem justifiable to exclude completely a hemolytic component as a contributing factor in the pathogenesis of fatal oliguria. This position is supported by the demonstration of mild hemolytic activity in the third case. By the use of special stains a positive iron reaction, indicative of hemoglobinemia, was produced in both liver and spleen. As previously stated, the septic state may have precipitated this condition or the hemolytic phenomenon[10] might have been a side effect of the postulated vasoconstrictor substance derived from the placenta. In sufficient concentration hemoglobinemia could be the initiating factor in vasoconstrictive renal ischemia; in lesser amounts its effect would be contributory.

Consideration of individual susceptibility to circulating chemical substances is essential, because oliguria following abortion is rare although abortion itself is a common occurrence. A state of generalized septicemia appears to be a prerequisite for the production of fatal oliguria after abortion.

What, then, is the relation between the lower nephron syndrome and symmetric cortical necrosis of the kidneys? Over half the cases of cortical necrosis, as reported in the literature, are related to obstetric abnormalities, and most reviews incriminate a placental factor in the pathogenesis of this lesion. Cortical necrosis may be considered a severer stage of lower nephron nephrosis, differing in the degree of cortical ischemia. With this lesion not only is intraglomerular pressure reduced below the level of optimum function but the blood supply is actually insufficient to meet the needs of cortical nutrition. A quantitative factor, either the amount of circulating toxins or the intensity of individual neurovascular response, may decide the morphologic pattern in these two conditions. The complete cessation of cortical flow would prevent hemal elements from passing through the glomeruli in quantity; therefore, pigmented casts would not be deposited in the tubules. Cortical necrosis is observed later in pregnancy, when the amount of toxin, which is absorbed, may be greater.

The histopathologic changes in the lower nephron syndrome, with emphasis on simple retrogressive changes such as simple necrosis in the distal convoluted tubules and the thick limb of Henle, can be accounted for by the deficient cortical vascular supply in partial renal ischemia. The loop of Henle and the collecting tubules, as shown by Trueta,[17] receive nutrient blood directly from efferent arterioles. In contrast, the proximal and distal convoluted tubules adjacent to the glomeruli receive blood which has already passed through the cortical intertubular capillary bed and thus contains less oxygen.

From a therapeutic point of view it appears that early evacuation of the uterus is indicated in nonseptic abortion associated with oliguria. Similarly, in septic abortion it should be to the patient's advantage to have retained placental tissue removed as soon as operability is established. This is considered of prime importance to promote reversal of oliguria or anuria, provided that they are already present, and to prevent the development of the degree of renal impairment which they signify.

## SUMMARY AND CONCLUSIONS

In 3 patients who died subsequent to septic abortion the clinical and histopathologic features of lower nephron nephrosis were observed. Fatal lower nephron nephrosis appears to be a comparatively rare complication of abortion, considering the number of persons exposed to this risk. Its development may depend on a hypothetic precipitating factor (nephrotoxic substance) derived from dead or dying placental tissue. This product in association with the septic state, perhaps synergistically, may initiate renal ischemia in susceptible persons.

Evacuation of the uterus, when the time of intervention is in accordance with surgical operability, may render the prognosis more favorable in septic abortion complicated by renal impairment.

Lower nephron nephrosis following abortion may be a clinical factor more commonly than the literature indicates at present.

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[19] Bergmann, M., and Fruton, J. S.: Specificity of Proteinases, Advances-Enzymol. 1: 63-98, 1941.

[20] Young, J.: The Eclamptic Phenomenon and Placental Ischaemia, J. Obst. & Gynaec. Brit. Emp. 49: 221-246 (June) 1942.

# BLACK HAIRY TONGUE ASSOCIATED WITH PENICILLIN THERAPY

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Local reactions from the use of oral penicillin (glossitis, stomatitis and vesicular cheilitis) have frequently been described. However, another type of reaction has been reported in the foreign literaure [1] but not in the American journals. The condition itself, black hairy tongue, has been known for many years, but its association with penicillin therapy is of recent note. I have observed this reaction to penicillin and believe that it is of sufficient interest to be documented.

## REPORT OF CASES

CASE 1.—In January 1948 a white woman aged 37 had been using penicillin lozenges for a sore throat. Discoloration of the tongue was observed a few days later. She was examined on the eighth day, at which time the tongue presented a velvety appearance and was brownish black on its medial and posterior portions. The filiform papillae were hypertrophied and bent like the nap of wet, heavy velvet when stroked with a tongue blade. The discoloration gradually cleared, and there has been no recurrence. The significance of the occurrence was not realized at the time.

CASE 2.—A white man aged 59, who had been admitted repeatedly to the Wadsworth General Hospital for treatment of bronchitis, was admitted again on July 12, 1948 for treatment of the same condition. Penicillin had not been used previously, but aerosol penicillin was administered on this admission. A black hairy condition of the tongue developed. No note was made of the date on which the discoloration first appeared. Penicillin therapy was discontinued. The tongue was treated with 50 per cent trichloracetic acid, and the abnormality cleared completely (fig. 1). The patient had subsequent admissions, at which times the tongue was normal.

CASE 3.—A white man aged 59 was admitted to the Wadsworth General Hospital on Aug. 12, 1948 for treatment of bronchitis and pneumonitis. The pneumonia cleared following the intramuscular injection of 50,000 units of penicillin every three hours for eight days (Aug. 12 to 20, 1948). However, the bronchitis persisted and aerosol penicillin, 50,000 units twice a day, was administered from September 15 to 30. No note was made of the time when the discoloration first appeared, but typical black tongue was seen on September 23, after eight days of therapy. The color was a greenish black and involved the back, medial furrow and pads but not the tip or sides of the tongue (fig. 2). Filaments teased from the tongue resembled, morphologically, the filiform papillae of black hairy tongue. In addition, Candida was cultured from the tongue scrapings. The tongue returned to normal when penicillin therapy was discontinued. The patient was last examined on April 30, 1949, at which time the tongue was still normal.

CASE 4.—A white woman aged 34 had used penicillin troches for five days, omitted them for four days and resumed taking them for two more days. The tongue showed discoloration after the first five days and became progressively darker. She was seen on April 19, 1949, five days after all therapy had been discontinued. The filiform papillae of the posterior, medial and pad portions of the tongue were hypertrophied and had a heavy dark brown color and plushlike appearance. Warm, saline mouth rinses with gentle scraping of the tongue were recommended. The patient was seen periodically, and the tongue was normal again by May 14, 1949.

## COMMENT

*Etiologic Basis.*—Black hairy tongue is an uncommon disease of unknown causation, although it is thought in some instances to be due to a congenital abnormality which develops in later life. Prinz and Greenbaum [2] have expressed their belief that "it is due to some constitutional state in the form of a trophoneurotic disturbance which electively predisposes the surface of the tongue to irritation by specific substances." Histologically, the filiform papillae are hypertrophic and hyperkeratotic and are the origin of hairlike filaments that may grow as long as ½ inch (1.27 cm.). The papillae become densely matted, and deposition of pigment takes place. The papillae may become covered by accumulations of bacteria and molds, which are part of the normal flora of the mouth. The pigment is considered to be derived from food, wines, tobacco, drugs such as iron and mercury and mouth washes that contain oxidizing or reducing chemicals.[2] According to Lederer,[3] the condition is frequently associated with an unhygienic mouth. Primarily, however, the pigment originates in a local chemical reaction between the decomposition products of food debris and the iron present in the minute quantity of blood that can be found almost all of the time near the free margins of the gums and between the teeth. It should be pointed out that the patients of this report were not heavy users of tobacco, had not been using strong mouth preparations or medicaments and were considered to have good oral hygiene.

Black tongue has also been caused by the filamentous myceliums of actinomycosis which have been cultured from the tongue.[4]

Cross [1b] estimates that discoloration of the tongue constitutes at least 30 per cent of all oral reactions in patients taking oral penicillin. The discoloration appears as early as two days, as late as nine days and on an average of four days following the use of penicillin. It is a pigmentation of the filiform papillae and involves principally the back of the tongue, the central furrow and portions of the pads, leaving the sides and tip unaffected (fig. 2). The color varies from yellowish brown to black.

*Mode of Action of Penicillin.*—The manner in which the penicillin acts is uncertain. Bedford's [1c] impression was that the discoloration was due to either a fungus or a chromogenic bacterial growth which followed the inhibitory action of penicillin on the usual flora of the mouth, which in turn act as inhibitors of other organisms. However, Cross [1b] failed to recover fungi or chromogenic bacteria.

Ellinger and Shattock [1d] studied the urinary nicotinamide output and found it greatly diminished under oral penicillin therapy. They thought that penicillin inhibited the growth of intestinal organisms involved in the synthesis of nicotinamide and that the oral reaction was related to a deficiency of this vitamin. However, they also considered local contact to be an important factor. In order to test the theory of nicotinamide deficiency, Cross [1b] treated a number of patients with oral penicillin

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Cases 1 and 4 are from the private records of the author.

From the medical service, Wadsworth General Hospital, Veterans Administration.

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[1] (a) Ackers, H.: Penicillin in Intra-Oral Lesions, (Survey of Over Two Hundred and Fifty Cases), Brit. Dent. J. **82**: 201-204 (May 16), 1947. (b) Cross, W. G.: Oral Reactions to Penicillin, Brit. M. J. **1**: 171-173 (Jan. 29) 1949. (c) Bedford, P. D.: Black Tongue and Oral Penicillin, ibid. **2**: 63 (July 13) 1946. (d) Ellinger, P., and Shattock, F.: Nicotinamide Deficiency After Oral Administration of Penicillin, ibid. **2**: 611-612 (Oct. 26) 1946. (e) Lahiri, K. D.: Melanoglossia Due to Penicillin Therapy, J. Indian M. A. **16**: 159-160 (Feb.) 1947.

[2] Prinz, H., and Greenbaum, S. S.: Lesions of the Mouth and Their Treatment, Philadelphia, Lea & Febiger, 1942, pp. 474-479.

[3] Lederer, F. L.: Diseases of the Ear, Nose and Throat, Philadelphia, F. A. Davis Company, 1944, p. 514.

[4] Andrews, G. C.: Diseases of the Skin, Philadelphia, W. B. Saunders Company, 1946, p. 809.

plus nicotinamide and observed that discoloration of the tongue developed in 20 per cent of the group.

Irritation from the lozenge base was investigated, but the use of lozenges consisting only of base did not produce a reaction. Certainly no such possibility existed in the 2 patients herein reported, who were treated with aerosol penicillin.

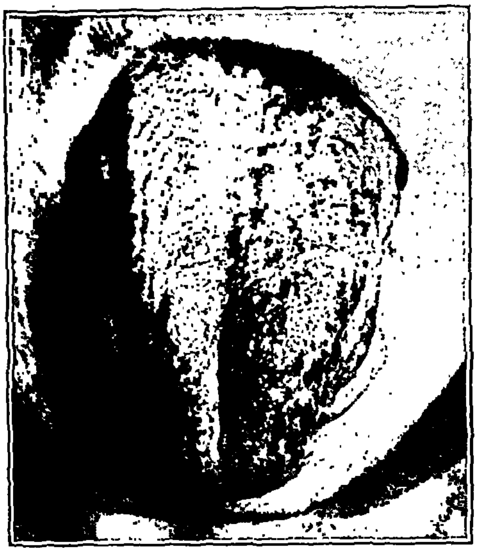

Fig. 1 (case 2).—Appearance of tongue after the application of 50 per cent trichloracetic acid. Residuals of the black tongue are still evident. The discoloration subsequently cleared completely.

Lastly, individual sensitivity to one or more forms of penicillin or their impurities has received attention. In this study I did not subject any patient to another course of penicillin in an attempt to reproduce the condition. One of Ackers'[1a] patients willingly took penicillin after the tongue had cleared. Black tongue developed again and cleared once more in about three weeks. In view of the experience with other local irritants, such as sodium perborate and tobacco, the most likely cause would appear to be the irritating action of the antibiotic. However, that would not explain a most interesting feature described by Lahiri.[1c] His patient received 50,000 units of penicillin intramuscularly every three hours for a total dosage of 500,000 units. Six hours after the last injection the patient noticed that his tongue was black and covered with black fur. When observed again twelve hours later the fur was gone and the tongue looked perfectly normal. If penicillin was the offending agent then it could only have acted directly through the blood stream, because, as demonstrated by Rammelkamp and Keefer,[5] penicillin does not appear in the saliva following intravenous administration. That does not necessarily imply that penicillin cannot act as an irritant in a limited predisposed area via the blood stream. The fact that the tongue cleared in the course of only twelve hours is also exceedingly surprising in view of other observations. In case 3 of this report the patient had had intramuscular injections of penicillin every three hours for eight days without the development of black tongue; and yet when aerosol penicillin therapy was started twenty-five days later, black tongue was noted on the eighth day of therapy. If penicillin can act via the blood stream, why did it not do so on a tongue that reacted so readily to oral administration of the agent? Perhaps future reports will confirm Lahiri's observation.

Histologic examinations have not been made of the tongues with discoloration due to penicillin. Clinically the hypertrophy of the filiform papillae is moderate; perhaps the absence of a severe and advanced form is what accounts for the ease of its resolution and its nonrecurrence. It may be that the more stubborn and chronic form would develop under prolonged and repeated use of penicillin.

*Therapy.*—There is no specific therapy for removal of the discoloration due to penicillin from the tongue. Cross[1b] noted *in many instances* that the oral cavity either became sterile or contained coliform organisms, and that the change usually took place in forty-eight hours. He reasoned and cautioned that oral treatment with penicillin should be limited to that period if black tongue is to be avoided. Once the discoloration has developed it can be reversed by interrupting the penicillin therapy. The tongue will return to its normal state in about one month. Adjunctive treatment with mouth washes and rinses is of doubtful value. In case 2 treatment with 50 per cent trichloracetic acid was initiated, but in the light of later experiences this should not have been necessary. Naturally, any compound containing strong oxidizing or reducing agents which may act as irritants should be avoided. In the remainder of the patients the condition resolved fairly rapidly when penicillin therapy was discontinued. This and the absence of recurrences are strong evidence that penicillin plays a role in the production of the black tongue, albeit the manner in which it acts is still uncertain.

*Prevalence of Condition.*—It is interesting that Cross[1b] noted discoloration of the tongue in 20 per cent of a group being observed for that specific effect. I am sure that that figure will prove not to be too high if careful observations are made in all persons using penicillin, particularly oral preparations. About two years ago a physician called attention to a discoloration of his tongue during the administration of aerosol penicillin. The discoloration was considered just a coating and was attributed to the illness for which he was being treated. The tongue cleared and has remained normal. In retrospect, the discoloration of his tongue was due to penicillin. I feel certain that many discolored

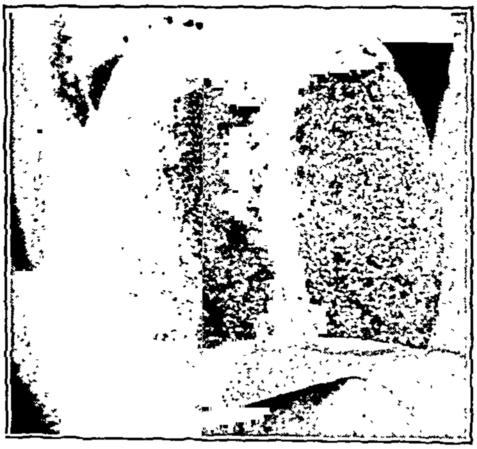

Fig. 2 (case 3).—Involvement of the posterior, medial and pad portions of the tongue with the sides and tip remaining clear. The posterior portion was most heavily involved but could not be adequately photographed. The discoloration resolved completely.

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[5] Rammelkamp, C. H., and Keefer, C. S.: The Absorption, Excretion and Distribution of Penicillin, J. Clin. Investigation 22: 425-437 (May) 1943.

these tests, the beauty clinic operators were instructed to insure thorough wetting of the scalp with the waving lotion, in order to circumvent any criticism that expert care could in any way modify the results. Furthermore, the careful records of the beauty clinic on many thousands of cases lend further support to the results on this smaller group.

Clinical studies to ascertain the presence of any systemic manifestations of toxicity were performed on this group of heavily exposed persons. Toxicologic evidence on animals[1] shows, and one clinical report[2] alleges hepatotoxic effects from the cold waving solution, while ingestion of the neutralizer may result in nephrotoxic manifestations.[3]

Of the 441 factory employees subjected to patch testing, 226 permitted the performance of complete laboratory studies. This group included 72 persons in daily intimate contact with the waving lotions and chemicals. The laboratory studies comprised a complete blood examination including determination of hemoglobin concentration, erythrocyte, leukocyte and leukocyte differential counts, an examination of the blood smear for abnormal cells and an estimation of the number of platelets. The urine was examined for albumin and reducing substances, and the sediment was examined microscopically. Tests for hepatic function, consisting of the cephalin cholesterol flocculation, prothrombin time and icteric index, were made.

Various deviations from the normal for one or more of these tests were obtained in 51 subjects. Of the 51, 43 permitted complete physical examination and the recording of a detailed medical history. Those who manifested any deviation from the normal in the liver function tests were subjected to the following additional tests: the thymol turbidity, sulfobromophthalein sodium excretion, the twenty-four hour excretion of urobilinogen and of coproporphyrin, the prothrombin response to vitamin K and a blood Wassermann determination.

The results of the blood examination were well within normal limits, the distribution, as exemplified in the accompanying chart, being that seen in general clinical practice in the St. Paul area.

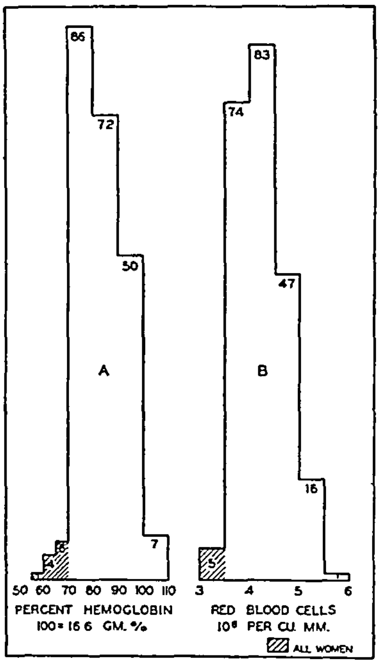
Urinalysis revealed the presence of reducing substance (glycosuria) in 8 of the 226 persons so examined, 2 of whom were positive on repeat tests and were found to have diabetes mellitus unrelated to contact with the chemicals. Less than 1 plus reaction for albumin was found in the voided urine of 15 women and 4 men. On retesting 13 of these subjects, the urine of 12 gave negative reactions to albumin and of 1 gave a faint trace. In 1 man the urine gave a 2 plus reaction for albumin, but he gave a history of albuminuria existing long before his present employment, which required daily contact with the waving lotion. The tests for liver function were performed on all these subjects with negative results. Microscopic examination of the urine did not reveal findings of significance to this investigation.

The icteric index was within the normal limits of 4 to 6 units. The prothrombin time was elevated in 10 of the subjects. Nine of these submitted to a most complete medical examination, including vitamin K response tests, sulfobromophthalein sodium retention tests and urobilinogen and coproporphyrin excretion studies. Results of all tests were within normal limits; hence, the origin of the elevation in prothrombin time was not revealed, and it was considered as a spontaneous deviation.

The cephalin flocculation tests never exceeded a 1 plus reaction in 24 hours or a 2 plus reaction in 48 hours and were considered as being within normal limits. The results are summarized in table 4.

Thymol turbidity examination of 13 subjects who had a 2 plus reaction with the cephalin flocculation test showed 2 subjects with a value of 5 units and 1 with 6.8 units. These figures are considered to be within normal limits.[4]

Physical examination was given to 43 of the 51 subjects who showed any deviation whatever from the normal on any of the laboratory tests. In interpreting the paucity of positive results, it should be noted that these men and women were substantially healthy persons employed at their various tasks. A few manifested some of the usual variety of abnormalities which would be encountered in any series of routine physical examinations of asymptomatic subjects. In no instance did either the history or the physical examination yield any evidence of any acute or chronic condition which might be expected in the presence of disease of the liver, the kidneys or the hematopoietic system.



Results of examination of blood in persons manifesting deviations from normal in liver function tests.

CONCLUSIONS

1. On the basis of these studies, cold wave preparations used in this investigation exhibited a low level of cutaneous irritation.

2. These preparations show a low sensitizing potential. Cutaneous reactions from contact with or exposure to these materials are of a negligible incidence.

3. In the literature attention has been directed to toxic manifestations, primarily, of a hepatotoxic nature, resulting from the use of cold wave preparations. Careful and intensive studies of a clinical and laboratory nature do not support the contention that toxic manifestations result from the use of cold wave preparations. Evidence of systemic toxicity from frequent exposu to the cold waving solutions tested was not found.

4. Cold wave lotions of the composition set forth in this paper are safe for general use.

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[1] Mulinos, M. G.: To be published.

[2] Cotter, L. H.: Thioglycolic Acid Poisoning in Connection with the "Cold Wave" Process, J. A. M. A. **131**: 592-593 (June 15) 1946.

[3] Thompson, H. C., and Westfall, S. W.: Potassium Bromate Poisoning: Report of a Case Due to Ingestion of a "Cold Wave" Neutralizer, J. Pediat. **34**: 362-364 (March) 1949.

[4] Ernst, R. G., and Dotti, L. B.: An Thymol
Turbidity Test, Am. J. M. Sc. **216**: 316-329 (

tongues are seen; however, the manifestation is not recognized as due to penicillin but attributed to the associated illness. On the tongues of lighter coloration the condition could easily escape detection. Undoubtedly, the manifestation will be more frequently recognized as its association with penicillin becomes more widely known.

SUMMARY AND CONCLUSIONS

Four cases of black hairy tongue associated with penicillin therapy are reported. The opinions of previous observers regarding the possible modes of action of the penicillin are discussed; however, the precise mechanism of its action is yet to be demonstrated.

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# THE COLD PERMANENT HAIR-WAVING PROCESS

## A Dermatologic and Clinical Study

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St. Paul
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This report concerns the effects of certain cold wave lotions on the health of 1,200 persons who volunteered for tests of these products. Millions of people are exposed to such chemicals. The 1,200 persons included normal persons and some with various skin diseases; persons without any known contact with cold waving lotions, as well as a great number subject to prolonged previous contact. The main active ingredient in cold waving lotions is ammonium thioglycolate. The material employed in these tests was Toni Home Wave. Because the chemical reactivity of cold waving lotions is affected by the concentration of ammonia and ammonium thioglycolate, by the alkalinity ($p_H$) and by the type and amount of wetting agent used, the data here reported cannot be applied to lotions containing ammonium thioglycolate with different concentrations of the adjuvants.

Previous reports on the medical aspects of cold waving lotions are meager and replete with contradictions and equivocations. A summary of the dermatologic reports is shown in table 1.

EXPERIMENTAL DATA

Patch tests were employed in the evaluation of cutaneous irritation and sensitization. The test materials included the commercial cold waving lotion, fresh and shelf-aged for a year; a 2 per cent solution of potassium bromate (neutralizer); mixtures of lotion and neutralizer in varying proportions, and solutions of ammonium thioglycolate at $p_H$ 9.2 and concentrations of 0.5, 1.0 and 1.5 normal for the determination of primary irritation. By the use of adequate numbers of paired patch tests on subjects with (*a*) no known previous contact with cold waving solutions, and (*b*) varying contact with the solutions; by the retesting of each subject within two to four weeks, and by interpreting the results in conjunction with a large body of data obtained under conditions of actual use of the waving solution, we conclude that these solutions have a low degree of irritancy, even when used in concentrations triple that used in practice, and a negligible power of sensitization.

Paired patch tests with the various cold waving solutions were performed at Bellevue Hospital on 286 patients (143 women, 143 men) with varous cutaneous diseases such as fungous infections (63), eczematous dermatitis (61) and others (162). One patient exhibited a weakly positive unilateral reaction but was unavailable for retest. Retesting 109 of the remainder twenty to forty days later yielded two weak reactions, one unilateral and the other bilateral. The latter was negative on a second retest. Tests including a lock of hair under the patch with the wave lotion did not result in reactions. Variation in the size of the patch from the usual ¼ inch to ½ inch and 1 inch (0.64 cm. to 1.27 and 2.54 cm.) did not affect the incidence of reactions.

Subjects with varying known contact with the cold waving solutions were available in St. Paul. The incidence of contact of these subjects with the various waving materials is shown in table 2. Included in the total of 931 subjects were 441 factory workers, some of whom were in daily and intimate contact with the chemicals. A careful study of the turnover rate of employment of this group showed it to be commensurate with the general rate of the locality. Furthermore, close questioning of employees who had resigned did not reveal any obvious connection between the reasons given for resigning and the degree of contact with the cold-waving chemicals during employment.

Paired patch tests were carried out on 863 of these subjects. The incidence of reaction is given in detail in table 3. Of the 16 initially positive reactions (of which 2 were 2 plus, all others being less), 2 were positive on retest and 1 was not retested. One of the reactors was a male factory worker who was exposed constantly during work to the cold wave chemicals. This constituted an incidence of 0.26 per cent in the 390 members of the factory group who had varying contact with the lotions. The other reactor to patch tests had had five cold waves without any reaction. Statistically this gave an incidence of 0.3 per cent among the 345 women who had had contact only during the administration of a cold wave permanent. None reacted to the neutralizer solution.

Thorough examination of the scalp of 174 subjects undergoing actual waves with the commercial waving materials was made (G. W.). Each of these women had had previously from one to twenty cold waves. Preliminary examination revealed excoriations and seborrheic dermatitis in 29 of these women.

Adverse effects were not seen either immediately or one week following the cold wave. Areas of slight erythema ascribable to hair pulls or overheating by the dryer disappeared within a day or two. During

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This article has been abbreviated in THE JOURNAL. The complete article and tabular data may be found in the authors' reprints.

This investigation was aided by a grant from the Toni Company, Chicago. A sample was submitted to Foster D. Snell Laboratories for chemical analysis. They reported as follows: The waving lotion, $p_H$ 9.21, contained ammonia by titration 0.86 per cent and thioglycolates (as thioglycolic acid) 4.61 per cent. The neutralizer gave positive tests for potassium and bromate (*label states, "... contains potassium bromate"*).

these tests, the beauty clinic operators were instructed to insure thorough wetting of the scalp with the waving lotion, in order to circumvent any criticism that expert care could in any way modify the results. Furthermore, the careful records of the beauty clinic on many thousands of cases lend further support to the results on this smaller group.

Clinical studies to ascertain the presence of any systemic manifestations of toxicity were performed on this group of heavily exposed persons. Toxicologic evidence on animals[1] shows, and one clinical report[2] alleges hepatotoxic effects from the cold waving solution, while ingestion of the neutralizer may result in nephrotoxic manifestations.[3]

Of the 441 factory employees subjected to patch testing, 226 permitted the performance of complete laboratory studies. This group included 72 persons in daily intimate contact with the waving lotions and chemicals. The laboratory studies comprised a complete blood examination including determination of hemoglobin concentration, erythrocyte, leukocyte and leukocyte differential counts, an examination of the blood smear for abnormal cells and an estimation of the number of platelets. The urine was examined for albumin and reducing substances, and the sediment was examined microscopically. Tests for hepatic function, consisting of the cephalin cholesterol flocculation, prothrombin time and icteric index, were made.

Various deviations from the normal for one or more of these tests were obtained in 51 subjects. Of the 51, 43 permitted complete physical examination and the recording of a detailed medical history. Those who manifested any deviation from the normal in the liver function tests were subjected to the following additional tests: the thymol turbidity, sulfobromophthalein sodium excretion, the twenty-four hour excretion of urobilinogen and of coproporphyrin, the prothrombin response to vitamin K and a blood Wassermann determination.

The results of the blood examination were well within normal limits, the distribution, as exemplified in the accompanying chart, being that seen in general clinical practice in the St. Paul area.

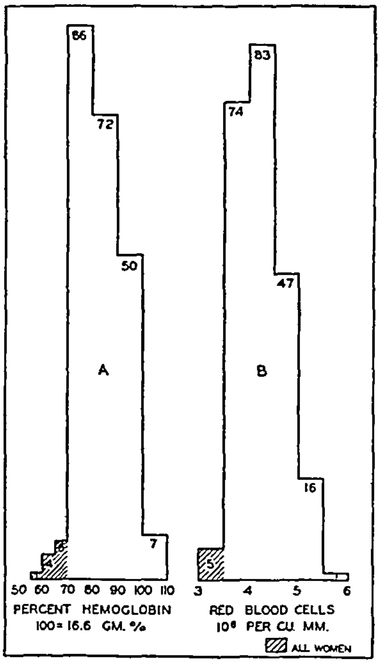
Urinalysis revealed the presence of reducing substance (glycosuria) in 8 of the 226 persons so examined, 2 of whom were positive on repeat tests and were found to have diabetes mellitus unrelated to contact with the chemicals. Less than 1 plus reaction for albumin was found in the voided urine of 15 women and 4 men. On retesting 13 of these subjects, the urine of 12 gave negative reactions to albumin and of 1 gave a faint trace. In 1 man the urine gave a 2 plus reaction for albumin, but he gave a history of albuminuria existing long before his present employment, which required daily contact with the waving lotion. The tests for liver function were performed on all these subjects with negative results. Microscopic examination of the urine did not reveal findings of significance to this investigation.

The icteric index was within the normal limits of 4 to 6 units. The prothrombin time was elevated in 10 of the subjects. Nine of these submitted to a most complete medical examination, including vitamin K response tests, sulfobromophthalein sodium retention tests and urobilinogen and coproporphyrin excretion studies. Results of all tests were within normal limits; hence, the origin of the elevation in prothrombin time was not revealed, and it was considered as a spontaneous deviation.

The cephalin flocculation tests never exceeded a 1 plus reaction in 24 hours or a 2 plus reaction in 48 hours and were considered as being within normal limits. The results are summarized in table 4.

Thymol turbidity examination of 13 subjects who had a 2 plus reaction with the cephalin flocculation test showed 2 subjects with a value of 5 units and 1 with 6.8 units. These figures are considered to be within normal limits.[4]

Physical examination was given to 43 of the 51 subjects who showed any deviation whatever from the normal on any of the laboratory tests. In interpreting the paucity of positive results, it should be noted that these men and women were substantially healthy persons employed at their various tasks. A few manifested some of the usual variety of abnormalities which would be encountered in any series of routine physical examinations of asymptomatic subjects. In no instance did either the history or the physical examination yield any evidence of any acute or chronic condition which might be expected in the presence of disease of the liver, the kidneys or the hematopoietic system.



Results of examination of blood in persons manifesting deviations from normal in liver function tests.

CONCLUSIONS

1. On the basis of these studies, cold wave preparations used in this investigation exhibited a low level of cutaneous irritation.

2. These preparations show a low sensitizing potential. Cutaneous reactions from contact with or exposure to these materials are of a negligible incidence.

3. In the literature attention has been directed to toxic manifestations, primarily, of a hepatotoxic nature, resulting from the use of cold wave preparations. Careful and intensive studies of a clinical and laboratory nature do not support the contention that toxic manifestations result from the use of cold wave preparations. Evidence of systemic toxicity from frequent exposure to the cold waving solutions tested was not found.

4. Cold wave lotions of the composition set forth in this paper are safe for general use.

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[1] Mulinos, M. G.: To be published.

[2] Cotter, L. H.: Thioglycolic Acid Poisoning in Connection with the "Cold Wave" Process, J. A. M. A. **131**: 592-593 (June 15) 1946.

[3] Thompson, H. C., and Westfall, S. W.: Potassium Bromate Poisoning: Report of a Case Due to Ingestion of a "Cold Wave" Neutralizer, J. Pediat. **34**: 362-364 (March) 1949.

[4] Ernst, R. G., and Dotti, L. B.: An Evaluation of the Thymol Turbidity Test, Am. J. M. Sc. **216**: 316-329 (Sept.) 1948.

# CONGENITAL DEFECTS FOLLOWING MATERNAL RUBELLA

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Gregg[1] in 1941 was the first to suggest a relationship between maternal rubella and congenital defects in the child. He studied 78 cases of congenital cataract associated with cardiac or other lesions and in 68 obtained a maternal history of rubella during pregnancy. Since this initial work in Australia, many reports have appeared on this subject. Various congenital defects, particularly cataracts, cardiac malformations and deafness have been reported. Mental retardation, hypospadias, talipes equinovarus, underdevelopment, difficult feeding problems and dental abnormalities also have been mentioned.

Further studies disclosed that rubella in the mother during the first trimester of pregnancy is most likely to affect the child. Swan,[2] Evans[3] and their Australian colleagues followed Gregg's lead and concluded that congenital defects resulted in 100 per cent of babies born to mothers having rubella in the first two months of pregnancy and 50 per cent of children born to women who had the disease in the third month. Subsequent studies by others have revealed that the chance of an infant's developing such a defect is perhaps not as high as early reports would indicate, although Conte's[4] recent review of the available data shows a startling correlation with results in earlier studies. This review includes 134 cases in which maternal rubella was followed by congenital abnormalities. In all but 3 instances rubella appeared in the first trimester of pregnancy. Congenital cataracts, congenital heart disease and mental retardation were the chief defects. Twenty cases of maternal rubella without congenital malformation in the infant are included in Conte's survey; in 4 rubella struck in the third month and in the remaining 16 cases, after the first trimester. Conte adds 5 cases of maternal rubella from his own files following response to a questionnaire; congenital defects (ocular, cardiac and mental) resulted in the offspring in all cases. Four of these mothers acquired the disease in the first trimester, and the fifth had it in the seventh month. From another questionnaire sent to the mothers of 120 congenitally malformed children, Conte found that 4.2 per cent gave a history of rubella during pregnancy, a percentage figure ten times the actual case rate of maternal rubella for the childbearing age group in the population at large.

To start with the defective child and then to attempt to establish a history of maternal rubella is perhaps to put the cart before the horse. While such studies shed light on the problem and are of some value, they are subject to limitations. Much of the early work was conducted in this manner and is of necessity retrospective. The fundamental problem under consideration is not what percentage of congenital defects are the result of rubella but rather what percentage of mothers acquiring the disease during pregnancy give birth to children with congenital defects.

Scant data are available on the percentage of women who had rubella during pregnancy, especially the first trimester, who subsequently gave birth to normal children. Fox and Bortin[5] attempted to determine the numerical probability of congenital anomalies following rubella during pregnancy. They found that of 152 married women who contracted rubella in Milwaukee, Wis., during the period 1942-1944, 11 had the malady during pregnancy; 5 during the first two months, 4 during the third and fourth months, 1 in the seventh month and 1 in the ninth month. One of the five who contracted the disease in the first two months of pregnancy subsequently had a stillborn infant. The remaining 10 had normal children.

Aycock and Ingalls[6] investigated 1,300 cases of rubella in Massachusetts and found that 4 occurred during pregnancy. Two were in the second month, 1 in the fourth and 1 in the ninth. One baby whose mother had rubella in the second month exhibited evidence of mental retardation. The other 3 were normal.

Questionnaires were sent by Ober, Horton and Feemster[7] to women between 17 and 49 years of age who had rubella in 1943 as reported to the Boston Department of Public Health. Fifty-four of some 3,000 women reported that they had contracted the disease while pregnant. Infants with abnormalities were observed in 8 of these cases and abortions or stillbirths in 9. Eleven of the 17 abnormal pregnancies were in women who contracted rubella during the first trimester. Since 22 of the group of 54 pregnant women suffered from the disease in the first trimester, the 11 abnormal pregnancies from this total of 22 represents an incidence of 50 per cent lost or defective.

In response to another type of questionnaire sent by the same workers, of 9 pregnancies complicated by rubella physicians reported that only 3 produced normal infants. Eight of the 9 women contracted rubella in the first trimester.[7]

## METHOD

This study was made in the hope that the accumulated data might be helpful as an index of the numerical probability of congenital defects in children born of mothers who had rubella during pregnancy. A request was made to all such women through the facilities of a syndicated health column. They were asked to indicate the period of gestation in which the ailment appeared and the outcome relative to the child. In this way it was hoped to ascertain how many normal and how many abnormal youngsters were delivered.

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[1] Gregg, N. M.: Congenital Cataract Following German Measles in the Mother, Tr. Ophth. Soc. Australia (1941) **3**: 35-46, 1941.

[2] Swan, C.; Tostevin, A. L.; Moore, B.; Mayo, H., and Black, G. H. B.: Congenital Defects in Infants Following Infectious Diseases During Pregnancy, with Special Reference to Relationship Between German Measles and Cataract, Deaf-Mutism, Heart Disease and Microcephaly, and to Period of Pregnancy in which Occurrence of Rubella is Followed by Congenital Abnormalities, M. J. Austraila **2**: 201-210 (Sept. 11) 1943.

[3] Evans, M. W.: Congenital Dental Defects in Infants Subsequent to Maternal Rubella During Pregnancy, M. J. Australia **11**: 225-228 (Sept. 2) 1944.

[4] Conte, W. R.; McCammon, C. S., and Christie, A.: Congenital Defects Following Maternal Rubella, Am. J. Dis. Child. **70**: 301-306 (Nov.-Dec.) 1945.

[5] Fox, M. J., and Bortin, M. M.: Rubella in Pregnancy Causing Malformations in Newborn, J. A. M. A. **130**: 568-569 (March 2) 1946.

[6] Aycock, W. L., and Ingalls, T. H.: Maternal Disease as a Principle in the Epidemiology of Congenital Anomalies, with a Review of Rubella, Am. J. M. Sc. **212**: 366-379 (Sept.) 1946.

[7] Ober, R. E.; Horton, R. J. M., and Feemster, R. F.: Congenital Defects in a Year of Epidemic Rubella, Am. J. Pub. Health **37**: 1328-1333 (Oct.) 1947.

## ANALYSIS OF DATA

The figures in tables 1 and 2 include information received in eighty-two letters concerning 84 babies. (There were two sets of twins.) Three children were stillborn; all the mothers had the disease in the first trimester of pregnancy. Of the 81 living children, 25 were normal and 56 were abnormal. The accumulated data are shown in terms of the several defects reported with reference to the trimester in which the mother acquired rubella.

Of the 56 living abnormal infants, 36 had a single defect and 20 had multiple defects. It is interesting to note that in 18 of the latter instances, the mother had the disease in the first trimester. In histories of 44 (78.6 per cent) of the abnormal living infants, the mother told of having rubella in the first trimester; the mothers of 8 infants (14.3 per cent) acquired the disease in the second trimester; in 1 questionable case (1.8 per cent) it was acquired in the last trimester. In 3 cases (5.3 per cent) the period of gestation was unknown.

TABLE 1.—*Effect of Maternal Rubella on Outcome of Pregnancy*

| | Trimester of Pregnancy | | | Stage of Gestation Unknown |
|---|---|---|---|---|
| | First | Second | Third | |
| Total | 54 | 19 | 8 | 3 |
| Normal | 7 | 11 | 7 | 0 |
| Abnormal | 44 | 8 | 1* | 3 |
| Stillbirths | 3 | 0 | 0 | 0 |
| Multiple anomalies | 18 | 1 | 0 | 1 |

* This child had cerebral infantile diataxia probably not associated with maternal rubella.

TABLE 2.—*Relation of Congenital Defects After Rubella to Trimester of Pregnancy*

| | Trimester | | | Stage of Gestation Unknown |
|---|---|---|---|---|
| | First | Second | Third | |
| Cataracts | 17 | 0 | 0 | 0 |
| Congenital heart disease | 17 | 1 | 0 | 1 |
| Deafness | 12 | 1 | 0 | 1 |
| Malformed teeth | 3 | 2 | 0 | 0 |
| Mental defects | 7 | 0 | 0 | 0 |
| Spina bifida and hydrocephalus * | 3 | 0 | 0 | 0 |
| Congenital gastrointestinal defects | 2 | 1 | 0 | 0 |
| "Blindness" | 1 | 2 | 0 | 1 |
| Miscellaneous | 11 | 2 | 0 | 1 |

* There was 1 additional infant with spina bifida alone (first trimester).

The defects described in order of frequency were congenital heart disease (19), congenital cataracts (17), deafness (14), mental deficiency (7) and malformed teeth (5). Gastrointestinal, spinal and skeletal defects occurred in lesser numbers.

The one abnormality reported as following rubella in the third trimester of pregnancy was cerebral palsy. This condition was not considered to be associated with the mother's illness.

In summary, 87 per cent of the babies born of mothers having rubella during the first trimester of pregnancy were abnormal, as were 42 per cent of those born in the second trimester; probably none in the third was abnormal.

## COMMENT

It is realized that this method of collecting data has numerous drawbacks and limitations and that any evaluation of such statistics must be made with caution. The results reported in the many letters depend to a large degree on the patient's memory. The accuracy of diagnosis in some instances is open to question. The proportion of normal to abnormal children is perhaps not strictly accurate because it is probable that some mothers with normal offspring either do not remember having had rubella or were not sufficiently impressed with the significance of the ailment to respond. The parent of a subsequently defective child is much more likely to respond. This is further substantiated by the fact that many of the mothers whose children were abnormal told of looking back into their pregnancy to search for a cause. The increased response by women having rubella in the first trimester is probably not indicative of a greater incidence of the disease during this time but rather a reflection of more pointed interest in this group in which abnormalities are more prone to occur.

The data are nevertheless presented as is and cannot be disregarded totally because of the consistency and general agreement with the several reports in the literature. The appearance of congenital heart disease, cataracts, deafness, mental deficiencies and malformed teeth in such large incidence is noteworthy, and the relationship to the occurrence of maternal rubella in the first trimester of pregnancy is striking. This is in keeping with previous reports and is surely significant.

The caliber of the letters received was surprising and worthy of comment. The majority were written intelligently and included considerable detail. Only a few (10) were rejected because of incomplete and confusing facts. Many were written by persons with a professional background. But accurate evaluation of this problem must await further study of cases in which the diagnosis has been established and the detail of subsequent developments carefully recorded.

However, in the light of the evidence that already has accumulated, one might question the propriety of permitting such results to accumulate in the future. At least the high percentage of congenital anomalies following maternal rubella in the first trimester is disturbing enough to warrant consideration of therapeutic curettage in these cases. The evidence in this article supports those who advocate abortion, although such a recommendation must always be made with caution. The situation should be explained to all prospective parents, who must be given an opportunity to share in the responsibility of deciding whether or not the pregnancy ought to be terminated. If the percentage of congenital defects is found to even approximate the figures that available reports indicate, the family and society in general would be better off if pregnancies in mothers having rubella in the first trimester were terminated early.

## SUMMARY

1. Eighty-two letters concerning 84 babies are the basis for a survey to establish the incidence of normal and abnormal infants following maternal rubella with reference to the trimester in which the disease was acquired and the specific defects in the abnormal infants.

2. The principal anomalies noted were congenital heart disease (19), congenital cataracts (17), deafness (14), mental deficiency (7) and malformed teeth (5).

3. Eighty-seven per cent of babies born of mothers having rubella in the first trimester were abnormal, 42 per cent in the second and probably none in the third.

4. The disadvantages and inaccuracies of the method and the data are admitted but the high percentage of abnormalities in children whose mothers had rubella the first trimester is significant of a correlation between congenital defects and maternal rubella.

5. The advisability of therapeutic abortion is raised. As yet no hard and fast rule can be made, and this important decision still awaits additional critical study. It is believed that all prospective parents should be acquainted with the background of the problem and given an opportunity to share in the decision relative to curettage.

# Clinical Notes, Suggestions and New Instruments

## TRICHINOSIS AS A CAUSE OF MAJOR ARTERIAL THROMBOSIS

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Arteriosclerosis obliterans and thromboangiitis obliterans are most commonly the causes of thrombosis in large arteries. Less frequently certain specific forms of arteritis due to syphilitic, rheumatic and acute infections, of which typhoid, typhus and influenza are examples, may result in thrombosis of major arteries in the lower extremities. Trauma, ergotism and certain blood dyscrasias such as polycythemia vera[1] must also be considered in the etiologic analysis of arterial thrombosis. Nygaard and Brown[2] describe idiopathic simple arterial thrombosis. Such additional etiologic agencies as chronic ulcerative colitis,[3] hypertensive cardiovascular disease and congestive failure have been described in the literature as rare causes.

Trichinosis has been considered as a potential source of arterial thrombosis. Kilduffe and others[4] describe a case of femoral arterial thrombosis resulting in gangrene and amputation of an extremity about seventeen days after the onset of the disease. Dr. Kilduffe believed that the trichinosis and femoral arterial thrombosis in this case represented simply a fortuitous coincidence. Dr. Barbash, one of the junior authors, maintained that it was possible that a direct causal, although inexplicable, relation existed between the trichinosis and the circulatory occlusion. Thrombosis of small vessels in trichinosis is well established.[5] However, references to major arterial thrombosis complicating trichinosis are infrequent. The following cases, one of which exhibited this relationship, are reported to further establish the fact that major arterial thrombosis may be a complication of trichinosis.

### REPORT OF CASES

CASE 1.—*History and Course.*—Mrs. A. V., a white woman, aged 54, was admitted to the medical service of Queens General Hospital on April 15, 1947, complaining of abdominal pains of two weeks' duration. The onset had been fairly sudden with epigastric pain followed by belching, diarrhea, nausea and vomiting. The pain was well localized and would come on about two hours after meals. A tarry stool was noted on one occasion two days before admission, but there was no blood in the vomitus. Increasing lassitude and fever had also been present. Physical examination revealed essentially normal conditions, and the true nature of the case did not become evident until the husband was hospitalized. The wife died several days before the husband.

CASE 2.—*History.*—Mr. L .V., a white man aged 59, a fur cutter born in Hungary, entered the hospital complaining of sore throat, dyspnea and weakness. Two weeks prior to admission he had a bout of severe diarrhea which lasted five days and left him extremely weak. The past and family histories were noncontributory.

*Physical Examination.*—The patient was well developed and well nourished, alert and cooperative, although obviously acutely ill and weak. The blood pressure was 110 mm. of mercury systolic and 70 mm. diastolic. The respiratory rate was 24 per minute, and breathing was somewhat labored. The temperature was elevated to 103.2 F., and the pulse was regular in rate but rapid, 120 per minute. There were moist rales at the base of both lungs. The heart was not enlarged or displaced. No murmurs or thrills were elicited. The abdomen was round, soft, nonrigid and nontender; the liver and spleen were not palpable. There was no edema of the face or extremities. There were no obvious areas of muscular tenderness. Except for hypoactive deep reflexes, the neurologic examination revealed normal conditions. The ocular fundi were essentially normal, exhibiting only a moderate tortuosity of the vessels. Rectal examination revealed moderate prostatic hypertrophy.

*Course and Treatment.*—During the first week of hospitalization there was a gradual decline in temperature but some increase in weakness. During the second week the temperature again began to rise. The patient complained of severe pain in the left calf and exhibited tenderness to pressure of the calf muscles and a positive Homan's sign on the left. A circumscribed swollen area with bluish discoloration of the skin appeared over the anterior surface of the left tibia. The left foot became cold and painful. The right lower extremity then also became pale and cold. The most distal palpable pulses in both lower extremities were those of the femoral arteries. Both legs became cold below the knees. The discolored area on the skin of the left leg increased in size rather rapidly. The administration of blood transfusions, penicillin, streptomycin and dicumarol® failed to avert gangrene. Within four days after the first appearance of the circumscribed area on the left leg, gangrene had developed in all the toes of the left foot. There was a line of demarcation just above the ankle. The patient's general condition deteriorated rapidly. Left supracondylar amputation was considered, but it was believed that the patient could not survive such a procedure. The right foot then became mottled in addition to being cold, pale and painful as previously noted. Also at this time (the end of the second week) there appeared in the right ocular fundus multiple flame-shaped hemorrhages. In order to alleviate the severe pain, both lower extremities were packed in ice. This measure succeeded in keeping the patient comfortable until he expired on May 17, three weeks after admission to the hospital, five weeks after the onset of the illness.

*Laboratory Examinations.*—Three blood cultures were sterile. Agglutination tests for typhoid O and H, paratyphoid A and B, and Brucella abortus and Proteus 0 X 19 antigens were negative on two occasions. Reactions of the blood to Wassermann and Kline tests were negative. Examination of the spinal fluid revealed normal composition. Several urine cultures were sterile. Hematologic studies revealed a polymorphonuclear leukocytosis with a shift to the left, no anemia and a normal number of eosinophils on six successive blood counts. Shortly before the death of the patient a positive Trichinella precipitin test in a 1:640 dilution was obtained. It is to be noted that a Trichinella precipitin test taken early in the course of the illness had been negative. The electrocardiogram was essentially normal.

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[1] Allen, E. V., and Norman, L. L.: Am. Heart J. **13:** 257-274 (March) 1937.

[2] Nygaard, K. K., and Brown, .G. E.: Essential Thrombophilia: Report of Five Cases, Arch. Int. Med. **59:** 82-106 (Jan.) 1937.

[3] Bargen, J. A., and Barker, N. W.: Extensive Arterial and Venous Thrombosis Complicating Chronic Ulcerative Arthritis, Arch. Int. Med. **58:** 17-31 (July) 1936.

[4] Kilduffe, R. A.; Barbash, S., and Merendino, A. G.: Am. J. M. Sc. **186:** 794-802 (Dec.) 1933.

[5] Gould, S. E.: Am. J. Clin. Path. **13:** 627-643 (Dec.) 1943.

### COMMENT

The onset of the acute illness and clinical course were similar in both husband and wife, except for the complicating thrombosis and gangrene in the husband. It is interesting to note that the wife had an immediate positive precipitin test for trichinosis in a 1: 1,280 dilution and a consistent eosinophilia averaging on several counts 10 per cent. Trichinosis was subsequently proved at postmortem examination by the finding of Trichinella cysts in various stages of encapsulation in numerous sections taken from the skeletal musculature and diaphragm of each patient.

In addition to Trichinella cysts, examination of the tissues of the husband also revealed multiple infarcts in kidneys and spleen and parenchymatous degeneration of the liver. There was no evidence of arteriosclerosis or thromboangiitis obliterans in the peripheral vessels. There was thrombosis of the left femoral artery with gangrene of the lower extremity. Mural thrombosis was present in the aorta, and there was thrombotic occlusion of the superior and inferior mesenteric arteries. Sections of tissue from the diaphragm and leg muscle were examined for Trichinella and showed recent infestation. The organisms were not discovered in the walls of the femoral artery, in the thrombus itself or in the periarterial tissues. The significant finding after a thorough search by means of serial sections for a specific lesion was a periadventitial leukocytic cellular infiltration with necrosis.

Perivascular leukocytic cellular infiltration was found consistently in sections taken from areas that demonstrated involvement of the vessel walls. In the neighborhood of actual vascular closure, the vessel walls appeared to be more deeply and heavily penetrated with this inflammatory infiltration. Serial sections of the vessels of the wife also demonstrated a perivascular infiltration, although not so extensively as that observed in the husband.

### SUMMARY

The observations suggest the mechanism of the production of arterial thrombosis in trichinosis. They also imply that had the process of infiltration of leukocytic cells continued in the first case, we might also have demonstrated clinical evidence of vascular thrombosis. These observations are consistent with those described by Gould[5] as producing thrombi in smaller vessels.

### CONCLUSION

Two cases of trichinosis are reported, 1 of which demonstrated massive gangrene of the left lower extremity resulting from thrombosis of the femoral artery. When thrombotic occlusion occurs in a major artery, trichinosis should be considered as a possible etiologic factor.

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## RECOVERY FOLLOWING AN OVERDOSE OF PYRITHYLDIONE (PRESIDON®)

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In recent months a new sedative-hypnotic drug, pyrithyldione (presidon,® 3,3-diethyl-2, 4-dioxotetrahydropyridine) has been made available for clinical use. Extensive studies of its pharmacology were reported in 1940 by Koppanyi and co-workers,[1] who concluded that the drug appeared to afford certain advantages over the barbiturates. On the basis of this work, subsequent investigators,[2] using therapeutic dosages in human subjects, concluded that the drug was an effective hypnotic and sedative which was distinguished by excellent tolerability. To our knowledge, the following case is the first reported instance of overdosage and intoxication attributable to pyrithyldione.

### REPORT OF CASE

A semicomatose white woman aged 27 was admitted to the Buffalo General Hospital May 5, 1949. She had previously been under the care of a psychiatrist, who found her anxious and depressed, while manifesting suicidal tendencies and many somatic symptoms. Either nursing care or hospitalization was recommended but was refused. It was presumed that the patient ingested twenty-four tablets (4.8 Gm.) of pyrithyldione some time during the eight hours prior to admission. The initial treatment consisted of 5 cc. of nikethamide solution 25 per cent given intravenously thirty minutes before admission. Physical examination on entry to the hospital revealed a pale, young adult woman of 106 pounds (48 Kg.) who responded only to painful stimuli. The rectal temperature was 97 F., the pulse rate was 100 and the blood pressure was 80 systolic and 60 diastolic. Respirations were shallow and the rate was 16 per minute. Neurologic examination revealed the following: pupils were equally constricted and reacted sluggishly to light; corneal and gag reflexes were present bilaterally. The deep tendon reflexes were active and equal except for absent knee and ankle jerks on the right. Pathologic reflexes were not elicited.

The stomach was lavaged and about 300 cc. of clear yellow fluid which contained a notable amount of whitish sediment was obtained. Intramuscular caffeine sodium benzoate (0.5 Gm.) and intravenous fluids were administered. One hour after admission the patient began to respond. The blood pressure rose to 108 systolic and 70 diastolic. The pupils became dilated and reacted well to light. The deep tendon reflexes returned. At the end of another hour thrashing movements of the extremities were observed. Five hours after admission the patient was still lethargic but answered questions. Nine hours after admission recovery was complete. Results of laboratory tests were as follows: Urinalysis revealed a rare red cell and 3 to 5 white cells; the specific gravity was 1.006. The hemoglobin level of the blood was 12.8 Gm.; the red blood cell count was 4,400,000 and the white count 14,000 with 75 per cent polymorphonuclear leukocytes. The blood urea nitrogen determination was 11 mg. per hundred cubic centimeters.

### COMMENT

Animal experiments (rabbit and dog) have indicated that intoxication due to pyrithyldione (3,3-diethyl-2, 4-dioxotetrahydropyridine) produces a progressive clinical state similar to that caused by the barbiturates. The initial response to pyrithyldione in large dosage is muscular incoordination and staggering. Following this there appear increasing sensory loss, hypnosis, coma and death. However, nearly fatal doses of the drug fail to abolish the corneal reflex. A gradual fall in blood pressure ending in circulatory collapse and cessation of cardiac activity is observed, but only after respiratory failure. A moderate degree of bradycardia is noted. Respirations become slow and of decreasing amplitude. A fall in body temperature is proportional to the amount of drug administered. After repeated daily doses there is no significant change in the peripheral blood picture. The smallest oral dose to produce sensory depression and motor paralysis in rabbits is 250 mg. per kilogram of body weight, as shown by Koppanyi and co-workers[1]; the oral minimal lethal dose is 500 to 600 mg. per kilogram. Our experience indicates that nonlethal amounts in an adult patient closely parallel the known effect in animals. The patient experiences a rapid and complete recovery within nine hours with supportive therapy. The dose ingested in this case was equivalent to 100 mg. per kilogram. This is much less than that producing early signs of intoxication in animals (250 mg. per kilogram in rabbits). Therefore, we believe it should be emphasized that the degree of tolerance in adult patients is probably less than that in animals. However, despite this apparently lessened tolerance in adult patients, the margin of safety remains relatively wide.

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From the Department of Medicine, Buffalo General Hospital.

[1] Koppanyi, T.; Herwick, R. P.; Linegar, C. R., and Foster, R. H. K.: Anch. internat. de pharmacodyn. et de thérap. **64:** 2, 1940.

[2] Polatin, P., and Horwitz, W. A.: Psychiat. Quart. **21:** 107 (Jan.) 1947. Freed, S. C.: J. Lab. & Clin. Med. **32:** 895 (July) 1947. Polatin, P.; Hirschberg, E.; Rubin, S. H., and Pirk, L. A.: Am. J. Med. Sc. **214:** 662 (Dec.) 1947.

# Council on Pharmacy and Chemistry

## REPORT TO THE COUNCIL

*The Council has authorized publication of the following statement from the Therapeutic Trials Committee, a standing committee of the Council on Pharmacy and Chemistry.*

Austin Smith, M.D., *Secretary.*

## ESTROGENS AND ANDROGENS IN MAMMARY CANCER

### A Progress Report

*In the fall of 1947 the Therapeutic Trials Committee undertook the sponsorship of a cooperative investigation of the effects of steroid hormones in the treatment of mammary cancer. This investigation, coordinated by a Subcommittee composed of Dr. Ira T. Nathanson, Massachusetts General Hospital, Boston, Chairman; Dr. Frank E. Adair, Memorial Hospital, New York; Dr. Williard Allen, Washington University of St. Louis, and Dr. Earl T. Engle, Columbia University, New York, has been proceeding for approximately eighteen months. On April 4 to 7, 1949, a conference of the investigators participating in this study*[1] *was held in Chicago, at which time the results of the coordinated studies were reviewed and recommendations made for future studies. This report summarizes the conclusions of the conference, which must be regarded as tentative and subject to revision as further experience accumulates. A full report of the conference will be made available in the near future to interested workers in this field.*

Walton Van Winkle Jr., M.D., *Secretary.*

The work of other investigators which led to the institution of the present cooperative study of steroid hormones in mammary cancer has been reviewed in a previous report.[2] In the present study, there are several objectives: (1) to define the precise role of steroid hormone therapy in advanced mammary cancer; (2) to determine the dosage levels of testosterone propionate considered optimum for adequate subjective and objective response; (3) to determine whether any differences in response occur with the use of different estrogens, and the optimum dosage of each, and (4) to investigate the mechanism of hormone action through a study of the biochemical, metabolic and histologic changes produced in the normal and pathologic tissues of the body.

#### PLAN OF STUDY

Four dosage schedules of testosterone propionate were selected for investigation, as follows:

Schedule A: 25 mg. three times weekly
Schedule B: 50 mg. three times weekly
*Schedule C: 100 mg. three times weekly*
Schedule D: 200 mg. three times weekly

Each investigator was encouraged to use schedule C on half of those patients selected for androgen therapy and one of the other three schedules on the remaining patients. The duration of therapy was left to the discretion of the investigator.

Six different estrogens were selected for study, and the dosage of each was established by the Subcommittee on the basis of available data on relative estrogenic potency in the human being. The estrogens and dosages used were as follows:

Diethylstilbestrol, 15 mg. daily
Ethinyl estradiol, 3 mg. daily
Premarin,® 30 mg. daily
Estradiol dipropionate, 5 mg. two times weekly (intramuscularly)
*Dienestrol, 15 mg. daily*
Dimethyl ether of diethylstilbestrol, 30 mg. daily

Each investigator was urged to use diethylstilbestrol on half of those patients suitable for estrogen therapy and to choose one of the other five estrogens for use in the remaining patients.

*Selection of Cases.*—It was suggested that testosterone propionate be used in patients of any age whose predominant metastatic lesions were osseous. Estrogen was suggested for patients over 60 years of age with predominantly soft tissue lesions. In some instances, at the discretion of the investigator, these recommendations were altered.

No patient was to be given steroid hormone therapy whose disease might be amenable to other forms of therapy, principally surgery or irradiation.

#### PRELIMINARY RESULTS

On March 1, 1949, approximately 750 case reports had been submitted to the Committee for review, of which 476 cases had had at least one follow-up report filed. Of these, 36 had received combined therapy with both estrogens and androgens and were not suitable for analysis, and 8 had been treated prophylactically after operation.

*Testosterone Propionate.*—A total of 285 patients with metastases were treated with testosterone propionate. Of these 77 had only soft tissue lesions, 82 had only osseous lesions and 126 had both types. Approximately 62 per cent of these patients experienced subjective relief, which consisted principally of relief of pain, feeling of well-being and increased appetite.

Objective improvement in soft tissue lesions was seen in approximately 1 out of 5 patients, while objective improvement in osseous lesions was slightly less frequent, only 18 per cent of patients showing favorable response.

The data available did not reveal any alteration of response in the various age groups, although the age of the patients varied from 25 to 79 years. Interestingly enough, there appears to be little or no difference in response among patients receiving the various dosage schedules of testosterone propionate. Too few patients received schedule A to permit conclusions to be drawn regarding the effectiveness of this dosage schedule. However, no significant difference in response to schedules B, C or D was found, and it was concluded that no real advantage was obtained by the use of doses over 150 to 300 mg. weekly.

From the point of view of total dose, the data suggested that for the maximum response, somewhat more than 3.0 Gm. of testosterone propionate should be administered. This was particularly true from the point of view of subjective response—only 33 per cent of the patients receiving less than 3.0 Gm. showed subjective improvement, whereas 73 per cent receiving more than 3.0 Gm. had relief of symptoms. A similar, though lesser, difference in objective response of both soft tissue and osseous lesions was seen in those patients receiving more than 3.0 Gm. total dose as compared with those receiving less.

The duration of therapy, as might be expected, influenced the response to testosterone both from the point of view of relief of symptoms and objective improvement. Only 32 per cent of patients with soft tissue lesions received relief of symptoms with less than two months' therapy, whereas 65 per cent received relief after more than two months' treatment. Patients with osseous lesions, in which pain is a prominent factor, showed relief somewhat sooner, 80 per cent having some degree of relief after one month's treatment and only 30 per cent obtaining relief after treatment of less than one month's duration.

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[1] The participating institutions contributing data to this conference together with the name of the responsible investigators are: Memorial Hospital, New York, Dr. Frank E. Adair; Massachusetts Memorial Hospitals, Boston, Dr. T. J. Anglem; Shreveport Charity Hospital, Shreveport, La., Dr. Paul D. Abrahamson; University of Oregon School of Medicine, Portland, Ore., Dr. William Y. Burton; Jewish General Hospital, Montreal, Quebec, Canada, Dr. H. C. Ballon; Swedish Hospital, Seattle, Dr. Franz Buschke; Dalhousie University School of Medicine, Halifax, Nova Scotia, Dr. R. W. Begg; Duval County Tumor Clinic, Jacksonville, Fla., Dr. Frederick H. Bowen; University of Pittsburgh School of Medicine, Pittsburgh, Dr. Joseph Hepp; Cornell University School of Medicine, New York, Dr. William A. Cooper; Chicago Tumor Institute, Chicago, Dr. Max Cutler; University of Wisconsin School of Medicine, Madison, Wis., Dr. A. R. Curreri; Cedars of Lebanon Hospital, Los Angeles, Dr. L. A. Eshman; The British Columbia Cancer Institute, Vancouver, British Columbia, Dr. Maxwell T. Evans; Washington University of St. Louis, Dr. Charles L. Eckert; University of Iowa School of Medicine, Iowa City, Dr. Barry Friedman and Dr. Robert Petersen; San Francisco Hospital, San Francisco, Dr. L. H. Garland; Allegheny General Hospital, Pittsburgh, Dr. Robert C. Grauer; University of Georgia School of Medicine, Augusta, Ga., Dr. Robert Greenblatt; Albany Medical College, Albany, N. Y., Dr. L. W. Gorham; National Cancer Institute, Bethesda, Md., Dr. Roy Hertz; University of Minnesota School of Medicine, Minneapolis, Dr. Robert A. Huseby; Bellevue Hospital, New York, Dr. Ira Kaplan; Ochsner Clinic, New Orleans, Dr. Champ Lyons and Dr. William Parson; Johns Hopkins Hospital, Baltimore, Dr. Edward F. Lewison; Cleveland Clinic, Cleveland, Dr. Perry McCullagh; Vanderbilt University Hospital, Nashville, Tenn., Dr. Barton McSwain; Chattanooga Tumor Clinic, Chattanooga, Tenn., Dr. S. S. Marchbanks; Los Angeles General Hospital, Los Angeles, Dr. Ian Macdonald; Massachusetts General Hospital, Boston, Dr. Ira T. Nathanson; Jefferson Medical College, Philadelphia, Dr. Karl Paschkis; Alameda County Hospital, Oakland, Calif., Dr. Robert J. Parsons; Multnomah County Hospital, Portland, Ore., Dr. Eugene W. Rockey; Duke University Hospital, Durham, N. C., Dr. W. C. Sealy; Cook County Hospital, Chicago, Dr. Joseph Silverstein; Street Clinic, Vicksburg, Miss., Dr. Augustus Street; University of Colorado School of Medicine, Denver, Dr. James Stapleton; Research and Education Hospital, Chicago, Dr. Samuel Taylor, III; University of Kansas School of Medicine, Kansas City, Kan., Dr. Galen M. Tice; M. D. [illegible] Hospital, Houston, Texas, Dr. Benjamin Wells; Walter Reed Ge[illegible] C., Major Keene M. Wallace, M. C.; [illegible] Baltimore, Dr. Grant Ward.

[2] Estrogens and Androgens in Mammary Cancer, Report of the Council on Pharmacy and Chemistry, J. A. M. A. **135:** 987 (Dec. 13) 1947.

An observation of interest was that, from the point of view of objective response, soft tissue lesions might show favorable responses after one month's therapy whereas the majority of osseous lesions which showed regression did not respond until after the fifth month of treatment.

It is yet too early to discuss with any accuracy the duration of either subjective or objective improvement following either androgen or estrogen therapy. It might be mentioned that approximately 20 per cent of testosterone-treated patients showing benefit have had improvement lasting for nine months or more. Many other patients have not received treatment for a sufficiently long period to determine the duration of their improvement.

*Estrogens.*—A total of 144 patients with metastases have been treated with estrogens, of which 92 were treated with diethylstilbestrol. Too few patients have as yet been treated with other estrogens to permit any conclusions being drawn regarding possible differences between them. Furthermore, the majority of patients were treated for soft tissue metastases and sufficient data on osseous lesion response is not now available. It may be said, however, that osseous lesions have been observed to respond favorably to estrogen therapy.

Approximately 60 per cent of patients treated with estrogens showed some degree of subjective relief of symptoms. About half the patients with soft tissue lesions showed objective improvement after estrogen therapy. There was a suggestion, in the relatively incomplete data, that patients over 60 years of age responded more favorably than those in the younger age groups, but, because of suggestions made to participants regarding selection of patients for treatment with estrogen, many more patients over 60 than under 60 were treated.

The results with diethylstilbestrol were better in those patients receiving a total dose of 2.0 Gm. or more. Also, a greater number of patients responded subjectively to diethylstilbestrol therapy after two months and objectively after five months of therapy than did those treated for lesser periods of time.

The duration of response to estrogen therapy is still undetermined, but about 25 per cent have maintained subjective and objective improvement for nine months or longer.

*Side Effects.*—Side effects from steroid therapy have been frequent and, at times, unpleasant. The most prominent side actions of testosterone are hirsutism, voice changes, increased libido and edema. These effects usually appear some weeks or months after the start of therapy. Hypercalcemia has been observed in a number of cases and occasionally has reached dangerous proportions. Several patients with severe hypercalcemia have been successfully treated with intravenous infusions of 2.5 per cent sodium citrate solution. This treatment should be used only if the hypercalcemia threatens the patient's life. It appears imperative that patients receiving testosterone be watched carefully for signs of hypercalcemia. Edema is also a potentially dangerous complication. Testosterone causes salt retention and may precipitate cardiac failure in elderly patients or patients with preexisting heart disease. This may be combated with a low sodium diet and diuretics.

Estrogens have produced nausea, uterine bleeding (usually when withdrawn), edema and other complications of cardiac failure. At times the nausea, often accompanied with vomiting, was sufficiently severe to require discontinuance of therapy. Occasionally, trial with a different estrogen overcame this difficulty.

All reactions occurred sufficiently frequently to stimulate a search for compounds having the desired therapeutic action with diminished incidence of unpleasant side effects.

### FUTURE STUDIES

The purpose of the conference of investigators was to correlate the information so far obtained in the investigation and to plan the direction of further studies. It became apparent that there were definite gaps in the data obtained and that certain areas of investigation should be explored more intensively. The conference agreed that the lower dosage schedules of testosterone propionate should be studied more adequately and that the estrogens other than diethylstilbestrol should be given more extensive trial. It was also agreed that the site or type of lesion should not necessarily be used as criteria for selection of cases for either androgen or estrogen therapy. Rather, it was decided that for the time being testosterone could be used in any patient whereas estrogens should be used only in patients at least five years following natural cessation of uterine bleeding, regardless of chronologic age.

An analysis of the data revealed that previous castration or irradiation therapy was confusing the appraisal of the results of steroid therapy in those instances where castration had been done or roentgen rays had been administered immediately prior to institution of hormone therapy. It was emphasized that if a patient could possibly receive benefit from castration or roentgen therapy, or further surgical treatment, the patient should not be given steroid hormones. Only those cases in which other methods of treatment had failed or were not feasible and in which surgical or irradiation castration had not been performed nor roentgen rays administered within the previous six months would be utilized for this investigation.

It was also agreed that greater emphasis must be placed on carefully controlled metabolic and biochemical investigations of selected cases.

The observation that steroid hormone therapy decidedly alters the metabolism of calcium, phosphorus and nitrogen, in both normal and cancerous patients, requires more intensive investigation. The significance of these alterations in blood and tissue chemical content with respect to the response of the tumor to steroid therapy is not apparent at this time, but these alterations suggest lines of attack on the general problem of mechanism of action.

The steroids also may produce profound changes on the hematopoietic system, as evidenced by the dramatic response of severe, refractory anemias in patients with metastatic breast cancer to testosterone therapy. No satisfactory explanation of this observation is yet available, and, although the effect may be immediately beneficial, the question of the ultimate result of such profound stimulation of the blood forming organs needs investigation.

Failures of therapy as well as successes also need intensive study from all aspects mentioned.

*Pathologic Material.*—By arrangement with the American Registry of Pathology at the Army Institute of Pathology, in Washington, D. C., biopsy and autopsy specimens and roentgenograms are being centralized for review by a group of consultants. The consultants in pathology are: Dr. Lauren V. Ackerman, Washington University of St. Louis; Dr. Fred Stewart, Memorial Hospital, New York, and Dr. Arthur Purdy Stout, Columbia University, New York. A preliminary review of the accumulated material by these consultants indicated a need for a careful study of tissue collected before, during and after treatment with the steroid hormones. Investigators were urged, therefore, to submit serial biopsy specimens from suitable patients treated with androgens or estrogens.

In addition to the possible determination of changes on the tumor tissue by the steroid hormones, this study presents an excellent opportunity to determine the effects of these substances on otherwise normal body tissues: skin, hair, follicles and other endocrine glands.

*Roentgenograms.*—The consultants in radiology, consisting of Dr. L. Henry Garland, San Francisco Hospital, San Francisco; Dr. Leo G. Rigler, University of Minnesota, Minneapolis, and Dr. Merrill Sosman, Peter Bent Brigham Hospital, Boston, have been asked to review and appraise the radiographic changes in lung and bone lesions following steroid therapy. Under the plan instituted by the conference each consultant will review the roentgenograms sent him by participating investigators in his geographic area. Significant roentgenograms will be selected by the consultants for duplication and collection at the Army Institute of Pathology. It was agreed that all cases should have a radiographic survey every three months after the start of therapy.

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SATURDAY, AUGUST 13, 1949

## LUPULON, AN ANTIBIOTIC FROM HOPS

The antibacterial properties of hops (Humulus lupulus) have been recognized for many years in connection with their use in brewing. From a petroleum ether extract an active principle, "lupulon," is readily crystallized.[1] Brewers[2] report that lupulon is 29,000 times more effective than phenol in restricting acid production by Lactobacillus bulgaricus. Added to agar or to Dubos' liquid medium,[3] lupulon inhibits the growth of most common fungi and many gram-positive bacteria; it also inhibits several acid-fast organisms, including the tubercle bacillus.

Chin[4] and associates of the Division of Experimental Therapeutics, University of California, have tested the therapeutic effects of lupulon on experimental tuberculosis in mice. Samples of crystalline lupulon were titrated for their in vitro effects on Mycobacterium tuberculosis. Added in serial dilutions to Dubos' fluid medium, each sample inhibited the growth of the H37Rv strain of the tubercle bacill[illegible] dilutions as [illegible]

At the end of thirty days a comparison of the tuberculosis severity was made between the treated and untreated groups. The group treated with intramuscular injections of lupulon showed a severity reduction ratio of 34 to 1 for the liver, 8 to 1 for the heart and 4 to 1 for the lungs and spleen. The two orally treated groups showed a severity reduction ratio of 10 to 1 for the liver and spleen, 5 to 1 for the lungs, 3 to 1 for the heart and 2 to 1 for the kidneys. The average therapeutic effect in the three treated groups was a 4 to 1 reduction in the severity of tuberculosis in all tissues and organs.

Histologic examinations showed that lupulon given intramuscularly in the selected dose produces some foci of degeneration in the renal tubules. Pathologic changes, however, were not observed in mice given the selected oral dose.

Chin attributes the definite tuberculostatic action of lupulon largely to its fat solubility, which enables it to be absorbed by the lipid fraction of the tubercle bacillus. Whether or not lupulon is also tuberculolytic has not been determined.

## RADIATION CATARACTS

As early as 1897[1] physicians knew that roentgen rays could damage some structures of the eye. Unequivocal demonstration of cataract formation in the lens of the irradiated immature kitten was made eight years later.[2] Since that time the entity of radiation cataract has been well established, both clinically and experimentally.[3] Even after the lapse of half a century, the data available are at best qualitative, and many unanswered questions remain as to dosage, species differences and individual variations in biologic susceptibility. Roentgen rays exert their major damage on the dividing cells of the lens equator, and this damage provides the nidus for the slowly developing, progressive lenticular opacities which appear, most characteristically in the posterior subcapsular region.[4]

Recently the development of cataracts in young which the control just turns the power on shall be recorded. The temperature at which the covering is energized 100 per cent of the time shall also be recorded. The difference in these room temperatures shall be considered the adequacy range of the covering and controller.

4. The wattage input to the covering shall be such and so regulated that the average temperature between the sheets of a standard bed shall not be lowered more than 1.8 degrees C. (3.3 degrees F.) for each 5.5 degrees C. (10.0 degrees F.) lowering in ambient within the recorded adequacy range of the covering, and when used in accordance with the manufacturer's recommendations. This lowering of bed temperature shall not exceed 5.5 degrees C. (10.0 degrees F.) in any case, regardless of adequacy range.

5. The manufacturer shall furnish to the Council a copy of its guaranty to the purchaser.

6. There shall accompany each covering clearly written instructions for its use.

7. The manufacturer shall give evidence that adequate facilities for servicing the covering are available and shall furnish names and addresses of servicing agencies.

8. The electrically heated bed covering shall be so constructed that it can be laundered by normal methods either at home or at a commercial laundry. Instructions for such laundering shall be part of the literature supplied with the covering.

9. Therapeutic claims, if any, shall be clearly stated in the literature accompanying the bed covering when sold. Conclusive evidence shall be submitted to substantiate the therapeutic claims. The manufacturer shall supply with the covering submitted for acceptance, data obtained in his own laboratory or in a recognized independent laboratory to support any specific claims which he may make for the device.

10. The sizes of wired area of the electrically heated bed coverings shall conform to one of the standard mattress sizes. The wired area shall not be more than 178 cm. (70 inches) long and of a width to conform, within a tolerance of plus or minus 5 cm. (2 inches), to the sizes given in the following table:

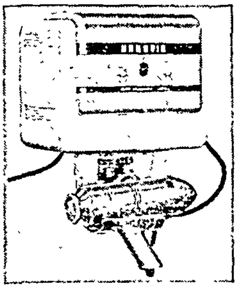
| | |
|---|---|
| Single bed | 91 cm. (36 inches) |
| Twin bed | 99 cm. (39 inches) |
| Three-quarter bed | 122 cm. (48 inches) |
| Double bed | 137 cm. (54 inches) |

11. The maximum bed temperature obtainable with control at "High" position under any condition of ambient temperature shall not exceed 108 F. (42 C.).

## WALL MODEL AERO-KROMAYER LAMP ACCEPTABLE

Manufacturer: Hanovia Chemical & Manufacturing Company, Chestnut Street & N. J. R. R. Avenue, Newark 5, N. J.

The Wall Model Aero-Kromayer Lamp is a source of ultraviolet radiation so designed that the control box is supported on a wall bracket and connected by a cable with the lamp and lamp housing. The lamp is held in the hand of the physician as he applies the radiation to the patient.



Hanovia Wall Model Aero-Kromayer Lamp

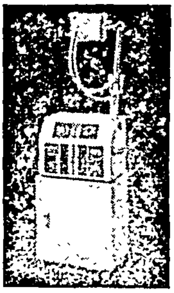
The construction of the lamp itself and the quality of its radiation were described in The Journal (117: 451 [Aug. 19] 1941) in the announcement of acceptance of the Hanovia Aero-Kromayer Lamp, Models S-2202 and S-2203. The present model differs only in the mounting of the control box and the housing of the lamp. Convincing evidence was obtained by the Council that the specimen furnished by the manufacturer had the physical properties and output claimed for it.

The Council on Physical Medicine and Rehabilitation vote to include the Wall Model Aero-Kromayer Lamp in its list o accepted devices.

## FISCHER TABLE MODEL 200 SHORT WAVE DIATHERMY UNIT ACCEPTABLE

Manufacturer: H. G. Fischer & Company, 9451-91 W. Belmont Avenue, Franklin Park, Ill.

The Fischer Table Model 200 Short Wave Diathermy Unit is intended for applying heat to the tissues and is designed to generate wavelengths of approximately 11 meters (corresponding to 27.12 megacycles) without the use of crystal control. It differs from the previously accepted Model 400 in size, being small enough to set on a table.



Fischer Table, Model 200 Short Wave Diathermy Unit

The height, width and length of the cabinet are 86, 86 and 51 cm. (34, 34 and 20 in.), respectively, and the weight is 47 Kg. (103 pounds). The domestic shipping weight is 78 Kg. (167 pounds) and the foreign, 90 Kg. (197 pounds).

The apparatus operates on a 120 volt alternating current and draws about 10 amperes (900 to 1,200 watts). It has Type Approval (D-484) of the Federal Communications Commission, and a letter received directly from the Underwirters' Laboratories, Inc., under date of Feb. 10, 1949, certifies that Model 200 has been found acceptable for listing.

The apparatus was tested for output by the lamp-load method. The output of Model 200, as indicated by two 100 watt, 120 volt bulbs, was about 150 watts.

The Council on Physical Medicine and Rehabilitation voted to include the Fischer Table Model 200 Short Wave Diathermy Unit in its list of accepted devices.

## BELTONE SYMPHONETTE MODEL HEARING AID ACCEPTABLE

Manufacturer: Beltone Hearing Aid Company, 1450 West 19th Street, Chicago 8.

The Beltone Symphonette Model Hearing Aid is a three tube air conduction hearing aid with the batteries contained in the amplifier case. Bone conduction is also available. The front of the case is constructed of flesh-colored plastic material. The back is made of stainless steel, the lower half of it being hinged to give access to the battery compartments. The magnetic receiver (marked "H") is connected to the top of the amplifier case by means of a light plastic-covered cord which has dual pin plugs at each end. A single wheel-type combination "On-Off" switch and volume control is located on the upper right hand side of the amplifier case. A sliding contact "Hi-Lo" tone control switch is on the top of the case. An attachment clip is fastened to the front of the case.

The following data were obtained from a laboratory acceptable to the Council.

Dimensions: 92 by 56 by 22 mm. ($3\frac{5}{8}$ by $2\frac{3}{16}$ by $\frac{7}{8}$ inch).

Weight: Including amplifier case with batteries, 170 Gm. ($5\frac{15}{16}$ oz.). Receiver and cord weigh an additional 7 Gm. ($\frac{1}{4}$ oz.).

*Battery Drain Data:*

| | Measured Voltage | Measured Current |
|---|---|---|
| A, mercury cell — 1.3 volts | 1.25 volts | 40 ma. |
| B, zinc and carbon—22½ volts | 21.00 volts | 0.72 ma. |

*Maximum Acoustic Gain for Pure Tones:*

| Frequency, Cycles | Lo Tone Control Position, Decibels | Hi Tone Control Position, Decibels |
|---|---|---|
| 250 | 38 | 19 |
| 500 | 45 | 31 |
| 1,000 | 52 | 43 |
| 2,000 | 62 | 58 |
| 3,000 | 70 | 6 |
| 4,000 | 44 | |

Council on Physical Medicine and
e the Beltone Symphonette M
epted devices.

### CONCLUSIONS

Certain conclusions were reached by the Subcommittee on Steroids and Cancer as to the present status of estrogens and androgens in the treatment of advanced mammary cancer. These are:

1. There is now available for the treatment of breast cancer a third weapon in the form of steroid hormones.
2. Barring future developments, this weapon will prove useful in the treatment of those patients with extensive and distant lesions who, heretofore, have been beyond direct attack on the disease.
3. Surgical treatment and irradiation, singly or in combination, still must be considered the primary forms of treatment, steroid hormone therapy being reserved only for those cases in which orthodox methods cannot be applied or have proved unsuccessful.

This last point is of considerable importance, and the usefulness of properly administered roentgen irradiation and operation should not be overlooked in the present period of steroid research. *Roentgen irradiation in the control or palliative* treatment of inoperable breast cancer, and of recurrences or metastases, is of well established usefulness. Its employment in the treatment of inoperable primary lesions, local recurrences, regional lymph node metastases, most cases of bone metastases and selected cases of pulmonary, cerebral and other metastases will usually alleviate symptoms and prolong life. The side effects of irradiation, properly administered, are usually fewer and less severe than those of steroid therapy, at least up to the present date. Steroid therapy should, the participating investigators believe, be reserved, in everyday clinical practice, for patients in whom the possibilities of adequate surgical treatment and careful roentgen irradiation have first been fully utilized and have given clear evidence of being no longer of benefit. Use in this sequence is suggested as being the most logical method in the light of present information.

Finally, the conference brought a greater realization to all the participants of the complexities in the evaluation of the effects of steroid hormones in mammary cancer. In considering the direction of future investigations, the conference concluded that it was important to concentrate attention on a study of possible mechanisms by which the steroid hormones produce beneficial changes in the patient suffering from breast cancer. The fact that steroid hormones do produce changes provides a hitherto unavailable tool for the study of the growth and regression of cancer cells.

The work of the cooperating groups is being pursued actively along the lines indicated in this report, and further data will be presented from time to time as these become available.

## NEW AND NONOFFICIAL REMEDIES

*The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.*

Austin Smith, M.D., *Secretary.*

**CHOLINE DIHYDROGEN CITRATE** (See New and Nonofficial Remedies 1949, p. 425).

The following dosage forms have been accepted:

Abbott Laboratories, North Chicago, Ill.

**Tablets Choline Dihydrogen Citrate:** 0.65 Gm.

Walker Vitamin Products, Inc., Mount Vernon, N. Y.

**Capsules Choline Dihydrogen Citrate:** 250 mg.

**Tablets Choline Dihydrogen Citrate:** 500 mg.

**PENICILLIN** (See New and Nonofficial Remedies 1948, p. 148).

The following dosage forms have been accepted:

Hynson, Westcott & Dunning, Inc., Baltimore 1

**Tablets Aluminum Penicillin:** 50,000 units. Buffered with sodium benzoate 0.3 Gm.

Chas. Pfizer & Co., Inc., Brooklyn 6

**Crystalline Penicillin G Potassium:** 1,000,000 unit vials.

**SODIUM DEHYDROCHOLATE** (See New and Nonofficial Remedies 1949, p. 341).

The following dosage form has been accepted:

R. J. Strasenburgh Company, Rochester, N. Y.

**Solution Sodium Dehydrocholate 20%:** 5 cc. ampuls.

**STREPTOMYCIN** (See New and Nonofficial Remedies 1949, p. 159).

The following dosage form has been accepted:

Chas. Pfizer & Co., Inc., Brooklyn 6

**Streptomycin Sulfate:** 20 cc. vials containing streptomycin sulfate equivalent in activity to 5 Gm. and 10 Gm. of streptomycin base.

**SULFADIAZINE-U. S. P.** (See New and Nonofficial Remedies 1949, p. 134).

The following dosage form has been accepted:

Brewer & Company, Inc., Worcester 4, Mass.

***Tablets Sulfadiazine:*** *0.5 Gm.*

**TRIASYN B-U. S. P.** (See New and Nonofficial Remedies 1949, p. 553).

The following dosage form has been accepted:

Brewer & Company, Inc., Worcester 4, Mass.

**Gel-ets Triasyn B:** Each capsule contains 2 mg. of thiamine hydrochloride, 3 mg. of riboflavin and 20 mg. of nicotinamide.

# Council on Physical Medicine and Rehabilitation

## REPORTS OF THE COUNCIL

*The Council on Physical Medicine and Rehabilitation has authorized publication of the following report.*

Howard A. Carter, *Secretary.*

### REQUIREMENTS FOR ACCEPTANCE OF ELECTRICALLY HEATED BED COVERINGS

Electrically heated bed coverings (blankets, comforters, bed spreads, etc.) are designed for the comfort of the normal healthy sleeper and are not primarily for therapeutic purposes. Like the conventional blankets and comforters, however, electrically heated bed coverings may also be used by a physician in the management of illness.

The following requirements are for the attention of the manufacturers of electrically heated bed coverings and state the conditions under which the Council on Physical Medicine will accept the products:

1. To insure safety with respect to electric shock and overheating, the device shall be listed as approved by the Underwriters' Laboratories, Inc.
2. The name of the manufacturer, catalog identification and rating in watts and volts shall be permanently marked in a readily visible location on each covering and control. A covering intended for use on only alternating current shall be so marked, and if this usage is further limited to specific frequencies of alternating current, it shall also be so marked.
3. The adequacy range of the device shall not be less than 20 degrees F. (11 degrees C.) nor more than 35 degrees F. (19 degrees C.); i. e., the difference in room temperature between the point where zero power is supplied to the covering and where 100 per cent power is supplied to the covering may not be less than 20 degrees F. or greater than 35 degrees F.

In measuring adequacy range, the covering and controller shall be connected to rated voltage. The controller shall be set at midpoint position. The room temperature (which should be high enough at the start of the test to prevent any power input to the covering) shall be gradually lowered. The temperature at which the control just turns the power on shall be recorded. The temperature at which the covering is energized 100 per cent of the time shall also be recorded. The difference in these room temperatures shall be considered the adequacy range of the covering and controller.

4. The wattage input to the covering shall be such and so regulated that the average temperature between the sheets of a standard bed shall not be lowered more than 1.8 degrees C. (3.3 degrees F.) for each 5.5 degrees C. (10.0 degrees F.) lowering in ambient within the recorded adequacy range of the covering, and when used in accordance with the manufacturer's recommendations. This lowering of bed temperature shall not exceed 5.5 degrees C. (10.0 degrees F.) in any case, regardless of adequacy range.

5. The manufacturer shall furnish to the Council a copy of its guaranty to the purchaser.

6. There shall accompany each covering clearly written instructions for its use.

7. The manufacturer shall give evidence that adequate facilities for servicing the covering are available and shall furnish names and addresses of servicing agencies.

8. The electrically heated bed covering shall be so constructed that it can be laundered by normal methods either at home or at a commercial laundry. Instructions for such laundering shall be part of the literature supplied with the covering.

9. Therapeutic claims, if any, shall be clearly stated in the literature accompanying the bed covering when sold. Conclusive evidence shall be submitted to substantiate the therapeutic claims. The manufacturer shall supply with the covering submitted for acceptance, data obtained in his own laboratory or in a recognized independent laboratory to support any specific claims which he may make for the device.

10. The sizes of wired area of the electrically heated bed coverings shall conform to one of the standard mattress sizes. The wired area shall not be more than 178 cm. (70 inches) long and of a width to conform, within a tolerance of plus or minus 5 cm. (2 inches), to the sizes given in the following table:

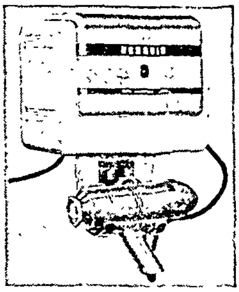
| | |
|---|---|
| Single bed | 91 cm. (36 inches) |
| Twin bed | 99 cm. (39 inches) |
| Three-quarter bed | 122 cm. (48 inches) |
| Double bed | 137 cm. (54 inches) |

11. The maximum bed temperature obtainable with control at "High" position under any condition of ambient temperature shall not exceed 108 F. (42 C.).

## WALL MODEL AERO-KROMAYER LAMP ACCEPTABLE

Manufacturer: Hanovia Chemical & Manufacturing Company, Chestnut Street & N. J. R. R. Avenue, Newark 5, N. J.

The Wall Model Aero-Kromayer Lamp is a source of ultraviolet radiation so designed that the control box is supported on a wall bracket and connected by a cable with the lamp and lamp housing. The lamp is held in the hand of the physician as he applies the radiation to the patient.



Hanovia Wall Model Aero-Kromayer Lamp

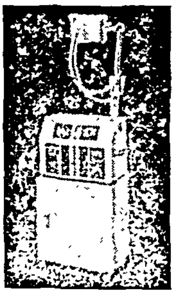
The construction of the lamp itself and the quality of its radiation were described in The Journal (117: 451 [Aug. 19] 1941) in the announcement of acceptance of the Hanovia Aero-Kromayer Lamp, Models S-2202 and S-2203. The present model differs only in the mounting of the control box and the housing of the lamp. Convincing evidence was obtained by the Council that the specimen furnished by the manufacturer had the physical properties and output claimed for it.

The Council on Physical Medicine and Rehabilitation voted to include the Wall Model Aero-Kromayer Lamp in its list of accepted devices.

## FISCHER TABLE MODEL 200 SHORT WAVE DIATHERMY UNIT ACCEPTABLE

Manufacturer: H. G. Fischer & Company, 9451-91 W. Belmont Avenue, Franklin Park, Ill.

The Fischer Table Model 200 Short Wave Diathermy Unit is intended for applying heat to the tissues and is designed to generate wavelengths of approximately 11 meters (corresponding to 27.12 megacycles) without the use of crystal control. It differs from the previously accepted Model 400 in size, being small enough to set on a table.



Fischer Table, Model 200 Short Wave Diathermy Unit

The height, width and length of the cabinet are 86, 86 and 51 cm. (34, 34 and 20 in.), respectively, and the weight is 47 Kg. (103 pounds). The domestic shipping weight is 78 Kg. (167 pounds) and the foreign, 90 Kg. (197 pounds).

The apparatus operates on a 120 volt alternating current and draws about 10 amperes (900 to 1,200 watts). It has Type Approval (D-484) of the Federal Communications Commission, and a letter received directly from the Underwirters' Laboratories, Inc., under date of Feb. 10, 1949, certifies that Model 200 has been found acceptable for listing.

The apparatus was tested for output by the lamp-load method. The output of Model 200, as indicated by two 100 watt, 120 volt bulbs, was about 150 watts.

The Council on Physical Medicine and Rehabilitation voted to include the Fischer Table Model 200 Short Wave Diathermy Unit in its list of accepted devices.

## BELTONE SYMPHONETTE MODEL HEARING AID ACCEPTABLE

Manufacturer: Beltone Hearing Aid Company, 1450 West 19th Street, Chicago 8.

The Beltone Symphonette Model Hearing Aid is a three tube air conduction hearing aid with the batteries contained in the amplifier case. Bone conduction is also available. The front of the case is constructed of flesh-colored plastic material. The back is made of stainless steel, the lower half of it being hinged to give access to the battery compartments. The magnetic receiver (marked "H") is connected to the top of the amplifier case by means of a light plastic-covered cord which has dual pin plugs at each end. A single wheel-type combination "On-Off" switch and volume control is located on the upper right hand side of the amplifier case. A sliding contact "Hi-Lo" tone control switch is on the top of the case. An attachment clip is fastened to the front of the case.

The following data were obtained from a laboratory acceptable to the Council.

*Dimensions:* 92 by 56 by 22 mm. (3⅝ by $2\frac{3}{16}$ by ⅞ inch).

Weight: Including amplifier case with batteries, 170 Gm. ($5\frac{15}{16}$ oz.). Receiver and cord weigh an additional 7 Gm. (¼ oz.).

*Battery Drain Data:*

| | Measured Voltage | Measured Current |
|---|---|---|
| A, mercury cell — 1.3 volts | 1.25 volts | 40 ma. |
| B, zinc and carbon—22½ volts | 21.00 volts | 0.72 ma. |

*Maximum Acoustic Gain for Pure Tones:*

| Frequency, Cycles | Lo Tone Control Position, Decibels | Hi Tone Control Position, Decibels |
|---|---|---|
| 250 | 38 | 19 |
| 500 | 45 | 31 |
| 1,000 | 52 | 43 |
| 2,000 | 62 | 58 |
| 3,000 | 70 | 68 |
| 4,000 | 44 | 44 |

The Council on Physical Medicine and Rehabilitation voted to include the Beltone Symphonette Model Hearing Aid in its list of accepted devices.

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SATURDAY, AUGUST 13, 1949

## LUPULON, AN ANTIBIOTIC FROM HOPS

The antibacterial properties of hops (Humulus lupulus) have been recognized for many years in connection with their use in brewing. From a petroleum ether extract an active principle, "lupulon," is readily crystallized.[1] Brewers[2] report that lupulon is 29,000 times more effective than phenol in restricting acid production by Lactobacillus bulgaricus. Added to agar or to Dubos' liquid medium,[3] lupulon inhibits the growth of most common fungi and many gram-positive bacteria; it also inhibits several acid-fast organisms, including the tubercle bacillus.

Chin[4] and associates of the Division of Experimental Therapeutics, University of California, have tested the therapeutic effects of lupulon on experimental tuberculosis in mice. Samples of crystalline lupulon were titrated for their in vitro effects on Mycobacterium tuberculosis. Added in serial dilutions to Dubos' fluid medium, each sample inhibited the growth of the H37Rv strain of the tubercle bacillus in dilutions as high as 1:40,000. Neither synergism nor antagonism occurred when lupulon was tested in the presence of other antituberculous substances, such as promin® (sodium p,p'-diaminodiphenyl-N,N'-didextrose sulfonate), streptomycin, subtilin or 2,3-dimercaptopropanol (BAL).

One hundred mice were infected intravenously with 0.02 mg. H37Rv strain of M. tuberculosis. Two groups of 20 mice each were set aside as controls. One group of 20 infected mice was given a daily intramuscular injection with 60 mg. lupulon, and two similar groups an intragastric dose of 150 mg. lupulon twice daily.

At the end of thirty days a comparison of the tuberculosis severity was made between the treated and untreated groups. The group treated with intramuscular injections of lupulon showed a severity reduction ratio of 34 to 1 for the liver, 8 to 1 for the heart and 4 to 1 for the lungs and spleen. The two orally treated groups showed a severity reduction ratio of 10 to 1 for the liver and spleen, 5 to 1 for the lungs, 3 to 1 for the heart and 2 to 1 for the kidneys. The average therapeutic effect in the three treated groups was a 4 to 1 reduction in the severity of tuberculosis in all tissues and organs.

Histologic examinations showed that lupulon given intramuscularly in the selected dose produces some foci of degeneration in the renal tubules. Pathologic changes, however, were not observed in mice given the selected oral dose.

Chin attributes the definite tuberculostatic action of lupulon largely to its fat solubility, which enables it to be absorbed by the lipid fraction of the tubercle bacillus. Whether or not lupulon is also tuberculolytic has not been determined.

---

[1] Michener, H. D.; Snell. N., and Jansen, E. F.: Arch. Biochem. **19:** 199, 1948.

[2] Walker, T. K., and Parker, A.: J. Inst. Brewing **43:** 17, 1937. Shimwell, J. L.: ibid. **43:** 111, 191, 1937.

[3] Dubos, R. J., and Davis, B. D.: J. Exper. Med. **83:** 409, 1946.

[4] Chin, Y. C. Anderson, H. H.; Alderton, G., and Lewis, J. C.: Proc. Soc. Exper. Biol. & Med. **70:** 158. 1949.

## RADIATION CATARACTS

As early as 1897[1] physicians knew that roentgen rays could damage some structures of the eye. Unequivocal demonstration of cataract formation in the lens of the irradiated immature kitten was made eight years later.[2] Since that time the entity of radiation cataract has been well established, both clinically and experimentally.[3] Even after the lapse of half a century, the data available are at best qualitative, and many unanswered questions remain as to dosage, species differences and individual variations in biologic susceptibility. Roentgen rays exert their major damage on the dividing cells of the lens equator, and this damage provides the nidus for the slowly developing, progressive lenticular opacities which appear, most characteristically in the posterior subcapsular region.[4]

Recently the development of cataracts in young physicists with a common history of exposure to cyclotron radiations has aroused a new and acute interest in this aspect of radiation injury. Again attention is focussed on the lacunas in our knowledge of the biologic mechanisms involved.[5] In this instance the hazard appears largely attributable to neutrons—particles without electrical charge but with high energy—produced when deuterons (the heavy stable isotope of ordinary hydrogen), accelerated in the magnetic field of the cyclotron, strike the target of the machine.

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[1] Chalupecky, H. J.: Die Wirkung der Röntgenstrahlen auf das Auge und die Haut, Zentralbl. f. prakt. Augenh. **21:** 234-239 and 267-271, 1897.

[2] Tribondeau, L., and Récamier, D.: Altérations des yeux et du squelette facial d'un chat nouveau-né par roentgenisation, Compt. rend. Soc. de biol. **58:** 1031-1032, 1905.

[3] Desjardins, A. U.: Action of Roentgen Rays and Radium on the Eye and Ear, Am. J. Roentgenol. **26:** 639-679 (Oct.); 787-819 (Nov.); 921-942 (Dec.) 1931. Leinfelder, P. J., and Kerr, H. D.: Roentgen Ray Cataract, Am. J. of Ophth. **19:** 739-756 (Sept.) 1936.

[4] Goldmann, H., and Liechti, A.: Experimentale Untersuchungen über die Genese des Röntgenstarrs, Arch. f. Ophth. **138:** 722-736, 1938.

[5] Cataract in Cyclotron Workers, editorial, New England J. Med. **240:** 441-442 (March 17) 1949.

Until recently, on the basis of acute experiments with mice, the assumption was granted that neutrons were no more than five times as effective as roentgen rays for biologic purposes. Recent work[6] and the sad experience of these young physicists point to the probability that a grave underestimate was made and that for certain organ systems, such as the lens and the gonads, neutrons may have four to eight times the effectiveness originally suspected.

Unfortunately for the physicists, protection procedures and exposure limits were based on the earlier assumption. Once again, as in the past with roentgen rays and radium, people have unwittingly been injured before an adequate understanding of a hazardous agent was had. Furthermore, even now dosimetric methods for neutrons are unsatisfactory.

An understanding of the mechanism of interaction of radiation with the components of biologic matter becomes important. In the case of roentgen rays the energy is first given to electrons, which move at high speed through the tissue. These electrons in turn dissipate their energy by collision with biologic matter, causing chemical alterations. However, the damage to any one cell by one electron is relatively small.

In the case of neutrons the energy is principally dissipated by collision with the hydrogenous component of tissue. The high speed protons thus set in motion liberate a large amount of energy per unit length of path. Thus the passage of one high energy proton through a cell may produce sufficient destruction to injure it permanently.

There is evidence that roentgen rays are relatively effective only against dividing cells, while neutrons may injure the cell at any phase. Thus the biologic effects produced by neutrons may be both quantitatively and qualitatively different from the effects of the roentgen ray. The urgency for research in this relatively unexplored field is evident.

In a broader sense, the experience of these young physicists points to the tremendous responsibility devolving on those—both the physicist-engineers and the agencies supporting their work—who are concerned with exploring the new frontiers of the physical sciences. It is not enough to dismiss the responsibility with the mere warning that a danger may exist or to extrapolate, as was done with the neutron, from inadequate analogies. The biologic implications of the new unknowns should be subjected to investigation parallel with their physical implications and with equal vigor.

## ASBESTOSIS AND CANCER OF THE LUNG

Until recently the coexistence of asbestosis and cancer of the lung was considered by many investigators a coincidence. Since 1935, 23 such cases were recorded by American, English and German physicians. Wedler[1] noted 14 cases of asbestosis cancer in a series of 92 necropsies on patients with asbestosis, or about 15 per cent of cancer of the lung in persons who died from this industrial disease. The exposure time ranged from 3 to 27 years (average 15 years). The ages in 17 cases were 35 to 75 years (average 50 years). Until now the question of a causal relation between asbestosis and cancer of the lung has been an open one. The recently published Annual Report of the Chief Inspector of Factories in England for 1947 provides additional data on the actual existence of such interrelations.[2] During 23 years, 1924 to 1946 inclusive, 235 deaths, either caused by asbestosis or in which asbestosis had been established at necropsy, were reported to the Chief Inspector. Cancer of the lungs or pleura was found in 31 of these cases (13.2 per cent). Of the 128 male deaths in this group 22 (17.2 per cent) were complicated by cancer of the lung, while of the 107 female deaths 9 (8.4 per cent) were similarly affected. The mean age at death from asbestosis complicated by cancer of the lung was 52.1 years. A causal relation between asbestosis and cancer of the lung is supported by the following observations: The incidence rate of cancer of the lung in this group is excessive, since the normal death rate from cancer of the lung among adults examined at necropsy at present is about 1 per cent of all necropsies. Moreover, there is a distinct shift in the sex distribution of cancer of the lung in the series of asbestosis cancers reported from England. The male-female sex ratio is 2.4:1, while it is 5:1 for cancers of the lung in general. This shift indicates that an environmental and evidently occupational carcinogen was active in the asbestosis group, tending to equalize the incidence rate of cancer of the lung for both sexes. Recent experimental observations support this interpretation of clinical evidence. Nordmann and Sorge[3] exposed mice to inhalation of asbestos dust and found that in 20 per cent of the surviving animals there developed squamous cell cancer originating from the bronchial mucosa, while other types of epithelial proliferation were present in 42 to 57 per cent of these animals, in addition to diffuse or nodular fibrosis of the lung. The histologic character of the cancers (squamous cell cancer instead of adenocarcinoma seen in the spontaneous cancer of the lung of mice) and the histogenetic derivation of the tumors (bronchial mucosa instead of alveolar epithelium of the spontaneous type) indicate that a specific factor of exogenous origin, represented by the inhaled asbestos dust, was responsible for the bronchial cancers observed.

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[6] Stone, R. S.: Neutron Therapy and Specific Ionization, Am. J. Roentgenol. **59**: 771-785 (June) 1948. Evans, T. C.: The Effects of Small Daily Doses of Fast Neutrons on Mice, Radiology **50**: 811-834 (June) 1948.

[1] Wedler, H. W.: Asbestose un Lungenkrebs. Deutsche med. Wchnschr. **69**: 575, 1943.

[2] Extract from Annual Report of the Chief Inspector of Factories for the Year 1947: Medical Section, London, His Majesty's Stationery Office, 1947, pp. 15-17.

[3] Nordmann, M., and Sorge, A.: Lungenkrebs durch Asbeststaub im Tierversuch, Ztschr. f. Krebsforsch. **51**:168, 1941.

Since some 20,000 workers are employed in the asbestos-producing industries of this country and Canada and many additional thousands in various asbestos-consuming industries, increased attention to this probable occupational hazard of cancer of the lung by the medical profession is desirable. Cytologic examinations of the bronchial secretion may well be included in the periodic examination of workers exposed to asbestos dust whenever clinical or roentgenologic evidence indicates the possible existence of a pulmonary cancer. As the available evidence shows that the occurrence of cancer of the lung is related to pulmonary asbestosis and is not merely a possible sequela of exposure to asbestos dust, in all fatal cases of asbestosis there should be postmortem examination with detailed histologic analysis. The anatomic lesions produced by asbestos dust in the lungs make difficult at times distinction by clinical and roentgenologic diagnostic methods between changes of pneumoconiotic nature and those that might indicate a cancerous growth.

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# Current Comment

## NODULAR PANNICULITIS—WEBER-CHRISTIAN DISEASE

Weber-Christian's disease, or nonsuppurative nodular panniculitis, is characterized by recurring episodes of fever and the development of numerous painful and slightly tender subcutaneous nodules. In only 3 of 33 recorded cases was death apparently due to the disease. In the case reported by Kritzler,[1] in which necropsy was done, the nodular lesions were limited to the subcutaneous fat. However, fat emboli were found in the lungs and there was widespread acute necrosis of the liver and spleen. In the case examined at necropsy by Spain and Foley,[2] necrotic areas were found not only in the subcutaneous fat but in the mesenteric, omental and pretracheal fat. Fat emboli were not found in the lungs, nor were areas of necrosis observed in the liver or spleen. However, foci of fat necrosis were present in the region of the pancreas. A third case investigated at necropsy was that of Mostofi and Engleman,[3] in which nonsuppurative panniculitis involved the skin, the epicardium and the peripancreatic, periadrenal, perirenal and mesenteric tissues. The nodules in the fat are of variable appearance. The earliest lesions consist of small accumulations of fat-laden macrophages. Later, there are somewhat larger lesions that present small areas of central necrosis in the immediate vicinity of which are lymphocytes, polynuclear leukocytes and fat-laden macrophages. In still older nodules, the necrotic material is decreased or absent and the lesions are partially or completely replaced by fibrous tissue. In Spain and Foley's patient, who was an alcohol addict, there were changes indicating a late stage of chronic glomerulonephritis, and death occurred with the symptoms of uremia. Such changes in the kidney are perhaps best interpreted as accidental necropsy findings without direct relationship to the syndrome under discussion. A disease in rabbits apparently analogous to that of nonsuppurative panniculitis in man has been described by Duran-Reynals [4] and others. The cause of Weber-Christian's disease is unknown.

## CRISIS IN SCIENTIFIC RESEARCH

Further evidence that the medical profession must coordinate and intensify its protection of the right to carry on experimental studies on animals in laboratories is provided in a report on this type of legislation in the District of Columbia. Representatives from twenty-six national health and science groups, local hospitals, lay groups and governmental agencies have united behind Senate bill 1703, providing for laboratory use of the 7,000 to 10,000 unclaimed dogs now destroyed each year in the District pound. The usual frenzied distortion and political pressure by antivivisectionists have placed the bill in jeopardy, according to the National Society for Medical Research. The society quotes Dr. A. C. Ivy, its secretary-treasurer, to the effect that members of the special Senate committee to which the bill was referred are personally in favor of it but the bill probably will not be reported out. Dr. Ivy has issued an appeal that interested persons write letters of endorsement to Senator J. Howard McGrath, of Rhode Island, who introduced the measure, and Senator Margaret Chase Smith, of Maine, chairman of the subcommittee. Some such concerted action is necessary at state as well as national levels to beat back efforts of a small, misguided group to obstruct the advancement of science.

## FIRST TELEVISION NETWORK HEALTH SHOW

The first health education program ever presented on a television network was viewed and heard from the NBC-TV studios in Radio City, New York, June 16. Transmitted as far west as Chicago, the program, titled "Your Good Health and the Mighty Atom," was arranged through the Bureau of Health Education of the American Medical Association and produced under the supervision of Mrs. Harriet Hester, radio coordinator for the Bureau. The program dealt with the use of radioisotopes in medicine, particularly radioactive iodine. Dr. Paul C. Aebersold, Chief, Radio-isotopes Division, United States Atomic Energy Commission, Oak Ridge, Tenn., was interviewed by an NBC announcer on the principles of radioactivity. With a Geiger counter specially amplified, Dr. Aebersold demonstrated first how radioactivity can be traced and atoms identified. Later, with a patient furnished by Dr. Sidney C. Werner, Columbia College of Physicians and Surgeons and Presbyterian Hospital, he demonstrated concentration of radioactive iodine in the thyroid.

---

[1] Kritzler, R.: A Case of Weber-Christian's Disease, Proc. New York Path. Soc., 1940-1941, p. 47.

[2] Spain, D. M., and Foley, J. M.: Non-Suppurative Panniculitis, Am. J. Path. **20**: 783, 1944.

[3] Mostofi, F. K., and Engelman, E.: Fatal Relapsing Febrile Non-Suppurative Panniculitis, Arch. Path. **43**: 417 (April) 1947.

[4] Duran-Reynals, F.: A Necrotizing Disease in Rabbits Affecting Fatty and Muscular Tissues, Yale J. Biol. & Med. **18**: 583, 1946.

# ORGANIZATION SECTION

## Washington Letter

*(From a Special Correspondent)*

Aug. 1, 1949.

### Radioisotope Research Encouraging, Dr. Warren Reports

In the three years that the Atomic Energy Commission has been distributing radioisotopes for medical research, the amount of new knowledge that has been gathered is "amazing," according to Dr. Shields Warren. His observation was made, in his capacity as director of AEC's division of biology and medicine, in the course of a press conference on August 4 on medical-biologic aspects of the Commission's sixth semiannual report submitted to Congress a few days previously.

For particular mention, among projects now being undertaken with AEC financial support, he singled out blood investigations at the University of Michigan and studies of changes in hepatic function in irradiated animals at the Bowman Gray School of Medicine, as well as long range research which has been proceeding in Japan for the last two years under the auspices of the National Research Council.

"Three years ago we assumed that the Commission would have to support a great part of this research," said Dr. Warren. "This has not been necessary. The Commission has found that it has simply to produce the isotopes. The research workers, clinics, laboratories and hospitals need no encouragement to put them to work."

Since August 1946, 7,613 shipments of radioisotopes have been made to research laboratories and hospitals. Nearly 30 per cent of the consignments has been for cancer investigations.

### Medical Missions Leave for Europe and Far East

Departing within twenty-four hours of each other early in August, an Army medical mission left for the Far East on a professional inspection trip and a group headed by Dr. Raymond B. Allen, medical services director of the armed forces, took off from Washington on a ten day tour of military medical installations in Europe.

Members of the Far East party were Col. Warner F. Bowers, chief of the surgical consultants division in the Office of the Army Surgeon General, and three civilian consultants: Dr. Henry H. Kessler (surgery), Newark, N. J.; Dr. Bruce Webster (internal medicine), New York, and Dr. Russell N. DeJong (neuropsychiatry), Ann Arbor, Mich. The tour is scheduled to last thirty-five days.

Dr. Allen was accompanied by the deputy director. Dr. Richard L. Meiling; Charles P. Cooper, chairman of the Armed Forces Medical Advisory Committee; Navy Surgeon General Clifford A. Swanson; Air Force Surgeon General Malcolm C. Grow; Army Deputy Surgeon General George E. Armstrong, and Rear Admiral Joel T. Boone, general inspector of Navy medical activities.

### Telegrams Fifteen to One Against Department of Welfare

The Senate Expenditures Committee had received, up to August 4, approximately 1,500 telegrams and letters protesting the establishment of a Department of Welfare as successor to the Federal Security Agency. It was on August 4 that the Committee, by a 7 to 4 margin, approved the Taft-Fulbright-Hunt resolution disapproving the reorganization plan. Committee officials disclosed that all but 100 of the 1,600 communications received urged approval of the resolution. State, county and local medical societies comprised the majority of the correspondents, while those supporting the Department of Welfare were labor groups and social service organizations in the main. These telegrams and letters were exclusive of the hundreds of similar communications sent to individual members of Congress. Senator Humphrey (D., Minn.) said that he alone received more than 500 of them.

The seven senators who voted against the Department of Welfare plan were John L. McClellan (committee chairman, D., Ark.), James O. Eastland (D., Miss.), A. Willis Robertson (D., Va.), Joseph R. McCarthy (R., Wis.), Irving M. Ives (R., N. Y.), Karl E. Mundt (R., S. D.) and Andrew F. Schoeppel (R., Kansas).

Three Democrats and one Republican constituted the minority: Senators Hubert H. Humphrey (Minn.), Glen H. Taylor (Idaho) and Clyde R. Hoey (N. C.) and the Senate's woman member, Mrs. Margaret Chase Smith (Maine).

### Veterans Administration Issues Hospital Report

As of July 31, 1949, the Veterans Administration was operating 106,491 hospital beds in 130 institutions, according to its latest compilation. Of the total, 48,571 beds were in 99 general medical and surgical hospitals; 48,921 were in 33 mental hospitals and 8,999 were in 18 tuberculosis hospitals. Under construction on that date were 32 hospitals and six additions, comprising a prospective 15,301 beds. In the planning stage were 30 more hospitals and five additions, which would add 21,650 beds.

## Coming Medical Meetings

Aero Medical Association, New York, Aug. 29-Sept. 2. Dr. Thomas H. Sutherland, 214 S. State St., Marion, Ohio, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., The Homestead, Sept. 8-10. Dr. Leroy A. Calkins, University of Kansas Medical Center, Kansas City 3, Kan., Secretary.

American Congress of Physical Medicine, Cincinnati, Netherlands Plaza Hotel, Sept. 6-10. Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secretary.

American Hospital Association, Cleveland, Sept. 26-29. Mr. George P. Bugbee, 18 East Division St., Chicago, Executive Secretary.

American Roentgen Ray Society, Cincinnati, Oct. 4-7. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Iowa, Secretary.

Colorado State Medical Society, Denver, Shirley-Savoy Hotel, Sept. 20-23. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver, Executive Secretary.

Gulf Coast Clinical Society, Pensacola, Fla., Oct. 6-7. Dr. Arthur J. Butt Jr., Pensacola, Fla., Secretary.

Indiana State Medical Association, French Lick, Sept. 25-27. Mr. Ray E. Smith, 1021 Hume-Mansur Bldg., Indianapolis 4, Executive Secretary.

International Congress of Biochemistry, Cambridge, England, Aug. 19-25. Lieut. Col. Francis J. Griffin, 56 Victoria St., London, W.C.1, Organizer.

International Neurological Congress, Paris, France, Sept. 5-10. Dr. Raymond Garcin, 19 rue de Borgogne, Paris, General Secretary.

Kansas City Southwest Clinical Society, Kansas City, Mo., Municipal Auditorium, Oct. 3-6. Dr. W. Merritt Ketcham, 630 Shukert Bldg., Kansas City, Mo., Secretary.

Kentucky State Medical Association, Owensboro, Oct. 6-9. Dr. Bruce Underwood, 620 S. Third St., Louisville 2, Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel and Civic Auditorium, Sept. 21-23. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Medical Society, St. Louis, Jefferson Hotel, Sept. 28-30. Dr. Harold Swanberg, 209-224 W. C. U. Bldg., Quincy, Ill., Secretary.

Nevada State Medical Association, Elko, Sept. 29-Oct. 1. Dr. Roland W. Stahr, 118 California Ave., Reno, Secretary.

Northern Minnesota Medical Association, Alexandria, Sept. 9-10. Dr. C. L. Oppegaard, Crookston, Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, Hotel William Penn, Sept. 26-29. Dr. W. F. Donaldson, 8104 Jenkins Arcade, Pittsburgh 22, Secretary.

Southern Minnesota Medical Association, Red Wing, Sept. 12, Dr. W. A. Merritt, Rochester, Secretary.

Southwestern Surgical Congress, Houston, Tex., Shamrock Hotel, Sept. 26-28. Dr. C. R. Rountree, 525 N.W. Eleventh St., Oklahoma City 3, Secretary.

Utah State Medical Association, Salt Lake City, Sept. 1-3. Dr. Ray T. Woolsey, 42 S. Fifth East St., Salt Lake City 2, Secretary.

Vermont State Medical Society, Burlington, Sept. 8-9. Dr. James P. Hammond, 542 Main St., Bennington, Secretary.

Washington State Medical Association, Seattle, Olympic Hotel, Sept. 11-14. Dr. James W. Haviland, 338 White-Henry-Stuart Bldg., Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Hotel Shroeder and Milwaukee Auditorium, Oct. 3-5. Mr. Charles H. Crownhart, 704 E. Gorham St., Madison, Secretary.

Wyoming State Medical Society, Casper, Sept. 12-14. Dr. George H. Phelps, 1606 Capitol Avenue, Cheyenne, Secretary.

# GOVERNMENT SERVICES

## ARMY

### ACCEPTED FOR ADVANCED TRAINING

The following medical officers have been accepted for advanced training by the civilian institutions indicated:

Col. Joseph F. Peters, Lieut. Col. Merrill C. Davenport and Lieut. Col. Frederick J. Hughes, American Trudeau Society, New York, Diseases of the Chest.

Lieut. Col. Marco B. Bonsignore, Washington University, St. Louis, Orthopedic Surgery.

Lieut. Col. Douglas B. Kendrick, Mayo Foundation, Rochester, Minn., Surgery.

Major John L. Bradley, Georgetown University, Washington, D. C., *Internal Medicine.*

Capt. Stuart H. Walker, Western Reserve University, Cleveland, Pediatrics.

First Lieut. Thelma Kiltz, St. Mary's Infirmary, Galveston, Texas, Anesthesiology.

First Lieut. Gracieuse L. Muirhead, St. Mary's Infirmary, Galveston, Texas, Anesthesiology.

First Lieut. H. A. Blake, Cornell University Medical College, New York, Surgical Anatomy.

Col. Joseph F. Peters, University of Colorado, Denver, Regional Anesthesia.

Lieut. Col. James H. Fairchild, University of California, San Francisco, Prosthesis.

Lieut. Col. Franklin S. Blanton, Cornell University, Ithaca, N. Y., Entomology.

Major Samuel P. Daykin, Washington University, St. Louis, Psychiatric Social Work.

Major Trygve O. Berge, University of California, Berkeley, Calif., Bacteriology and Virology.

Capt. Ralph W. Morgan, Indiana University, Bloomington, Ind., Psychiatric Social Work.

Capt. Lee B. Grant, University of Cincinnati, Cincinnati, Internal Medicine.

Capt. Euclid G. Herndon Jr., Cleveland Clinic Foundation Hospital, Cleveland, Research Medicine.

Capt. Thomas J. Whelan Jr., Strong Memorial Hospital, Rochester, N. Y., Surgery.

Capt. Thomas S. Martin, Passavant Memorial Hospital, Chicago, Internal Medicine.

Capt. Robert F. Wright, Boston City Hospital, Boston, Otolaryngology.

Capt. Stephen J. Berte, St. Vincent's Hospital, New York, Medicine.

Capt. John K. Spitznagel, Barnes Hospital, St. Louis, Internal Medicine.

Capt. Clem C. Crossland Jr., George Washington University Hospital, Washington, D. C., Pathology.

Capt. Allan C. Evans, Parkland Hospital, Dallas, Texas, Obstetrics and Gynecology.

Capt. Frank E. Schwartz, Eye and Ear Hospital, Pittsburgh, Ophthalmology.

First Lieut. Frank L. Dunn, and First Lieut. George A. Colom, Colorado Psychopathic Hospital, Denver, Psychiatry.

First Lieut. Edward L. Buescher, Children's Hospital, Cincinnati, Virology.

First Lieut. Joseph L. Giradeau, Grady Memorial Hospital, Atlanta, Ga., Obstetrics and Gynecology.

First Lieut. James D. Roorda, St. Elizabeth's Hospital, Chicago, and Alexian Brothers' Hospital, Chicago, Internal Medicine.

First Lieut. John N. Gordon, Medical College of Virginia, Richmond, Obstetrics.

First Lieut. John A. Moncrief, Barnes Hospital, St. Louis, Surgery.

First Lieut. Thomas H. Moseley, Crawford W. Long Hospital, Atlanta, Ga., Obstetrics and Gynecology.

First Lieut. William G. Phippen, Syracuse University Medical Center, Syracuse, N. Y., Surgery.

First Lieut. Gilbert A. Varnell, Baroness Erlanger Hospital, Chattanooga, Tenn., Obstetrics.

First Lieut. Robert C. Gildersleeve, White Memorial Hospital, Los Angeles, Fellowship in Oncologic Surgery.

First Lieut. John Q. Thompson, Henry Ford Hospital, Detroit, Medicine.

First Lieut. Archibald M. Ahern, St. Mary's Hospitals, St. Louis, Internal Medicine.

First Lieut. Thomas P. Clarke, Colorado Psychopathic Hospital, Denver, Psychiatry.

First Lieut. Robert R. Hahn, University Hospital, Baltimore, Medicine.

First Lieut. John B. Selby, Garfield Hospital, Washington, D. C., Medicine.

First Lieut. Jack E. Geist, Minneapolis General Hospital, Minneapolis, Neuropsychiatry.

First Lieut. John C. Baber Jr., Missouri Pacific Hospital, St. Louis, and St. Lukes Hospital, St. Louis, Surgery.

First Lieut. Robert C. Gardner, St. Louis Children's Hospital, St. Louis, Pediatrics.

First Lieut. Richard K. Cole Jr., University of Virginia Hospital, Charlottesville, Va., Psychiatry.

First Lieut. David W. Wardell, Colorado State Hospital, Pueblo, Colo., Psychiatry.

First Lieut. Louis J. West, New York Hospital, New York, Psychiatry.

First Lieut. William F. Creeps, University of California Hospital, San Francisco, Obstetrics and Gynecology.

First Lieut. Gerald A. Champlin, Missouri Baptist Hospital, St. Louis, Surgery.

First Lieut. Charles C. Parker, Medical College of Virginia, Richmond, Surgery.

First Lieut. Vol K. Phillips, New York Hospital, New York, Internal Medicine.

First Lieut. Donald G. Pocock, Cleveland City Hospital, Cleveland, Internal Medicine.

First Lieut. William H. Weingarten, Northwestern Hospital, Minneapolis, Surgery.

First Lieut. Richard K. Blaisdell, Charity Hospital of Louisiana, New Orleans, Medicine.

First Lieut. Anthony L. Brittis, Bellevue Hospital, New York, Physical Medicine.

First Lieut. Joseph V. Conroy Jr., Medical Center, Jersey City, N. J., Surgery.

First Lieut. Clifford P. Coplerud, Grady Memorial Hospital, Atlanta, Ga., Obstetrics and Gynecology.

First Lieut. Ira B. Harrison, Emory University Hospital, Atlanta, Ga., Internal Medicine.

First Lieut. Robert H. Moser, Georgetown University Hospital, Washington, D. C., Internal Medicine.

First Lieut. Paul E. Teschan, Presbyterian Hospital, Chicago, Internal *Medicine.*

First Lieut. Charles E. Butterworth, Jefferson-Hillman Hospital, Birmingham, Ala., Internal Medicine.

First Lieut. William J. Dean and First Lieut. Armand E. Hendee, Grady Memorial Hospital, Atlanta, Ga., Internal Medicine and Obstetrics and Gynecology, respectively.

First Lieut. John B. Logan, Garfield Memorial Hospital, Washington, D. C., Internal Medicine.

First Lieut. Roscoe E. Mason, Boston City Hospital, Boston, Surgery.

First Lieut. Carter L. Meadows, Emory University Hospital, Atlanta, Ga., Surgery.

First Lieut. Francis J. Peisel, Morrisania City Hospital, Bronx, N. Y., Otolaryngology.

First Lieut. Robert H. Wildhack, Millard Fillmore Hospital, Buffalo, Obstetrics and Gynecology.

First Lieut. Don G. Bock, Methodist Hospital, Indianapolis, Internal Medicine.

First Lieut. William W. Bindeman, West Baltimore General Hospital, Baltimore, Surgery.

First Lieut. Robert M. Senty, Charles T. Miller Hospital, St. Paul, Internal Medicine.

First Lieut. Robert M. Counts, Barnes Hospital, St. Louis, Neuropsychiatry.

First Lieut. Samuel L. Dunaif, Bellevue Hospital, New York and New York State Psychiatric Institute, New York, Psychiatry.

First Lieut. Williford Eppes, University Hospital, Baltimore, and State University of Iowa Hospitals, Iowa City, Medicine.

First Lieut. David A. Hamburg, Yale University, New Haven Hospital, New Haven, Conn., Psychiatry, and Michael Reese Hospital, Chicago, Neuropsychiatry.

First Lieut. John H. Webb Jr., Grady Memorial Hospital, Atlanta, Ga., Surgery.

Lieut. Col. Warren J. Barker, University of Chicago School of Medicine, Chicago, Psychiatry, and Institute for Psychoanalysis, Chicago, Personal Psychoanalysis.

Major Hinton J. Baker, Mary Imogene Bassett Hospital, Cooperstown, N. Y., Tissue Culture.

### PERSONAL

Colonel Emmett M. Smith has been appointed chief of the Physical Medicine Consultants Division in the Surgeon General's office and Colonel Hugh R. Gilmore Jr., head of the Pathology and Allied Sciences Division.

Dr. Lewis H. Weed, chairman of the Surgeon General's Committee on Medical Indexing, Army Medical Library, has resigned on account of illness.

## NAVY

### MONTHLY MEDICAL MEETING

Dr. Richard B. Cattell, of Boston, was the guest speaker at the Naval Medical School, Bethesda, Md., June 2, 1949. Dr. Cattell lectured on "Management of Inflammatory Lesions of the Small and Large Intestines."

### PERSONAL

Lieutenant Wendell W. Robley, MC, has been recently certified by the American Board of Radiology.

### DUTY UNDER INSTRUCTION

The following officers have been nominated for duty under instruction in the Graduate Medical Training Program:

Comdr. Benjamin W. Clark, General Surgery, University of Pennsylvania Graduate School of Medicine.

Comdr. Paul R. Engle, Tropical and Internal Medicine, Tulane University School of Medicine.

Comdr. James E. Eppley, Surgery, University of Pennsylvania Graduate School of Medicine.

Comdr. Donald W. Miller, Surgery, Naval Hospital, San Diego.

Comdr. Derrick C. Turnipseed, Surgery, Naval Hospital, Long Beach, Calif.

Comdr. John D. Walters, Dermatology and Syphilology, Naval Hospital, Philadelphia.

Comdr. Elwood L. Woolsey, Obstetrics and Gynecology, University of Pennsylvania Graduate School of Medicine.

Lieut. Comdr. Wm. G. Lawson, Dermatology and Syphilology, Naval Hospital, San Diego.

Lieut. (jg) William T. Lineberry, Surgery, University of Pennsylvania Graduate School of Medicine.

Lieut (jg) Edward J. Rupnik, Surgery, Naval Hospital, National Naval Medical Center, Bethesda, Md.

Lieut. (jg) Alan D. Watson, Dermatology and Syphilology, Skin and Cancer Unit, New York University College of Medicine.

Lieut. (jg) Sydnor T. Withers, Dermatology and Syphilology, Naval Hospital, St. Albans, N. Y.

Lieut. (jg) Henry E. Wolfe Jr., Urology, James Buchanan Brady Foundation of New York Hospital.

# VETERANS ADMINISTRATION

## MATHEMATICAL FORMULA FOR SELECTING HOSPITAL SITES

Carl R. Gray Jr., Veterans Administrator, announces that Salisbury, N. C., was chosen as the site for a 1,000 bed neuropsychiatric hospital which is expected to cost about $17,000,000. The Veterans Administration has owned the land, 411 acres, since 1945. Mr. Gray inspected several sites in North Carolina before selecting the one at Salisbury, and after he returned to Washington a mathematical formula was devised by which sites could be compared with each element of importance in locating a hospital, so that the selection could be made strictly on a mathematic basis. This formula proved so successful in this instance, Administrator Gray announced that it will be used in all future selections of hospital sites. The Salisbury site chosen, he said, is not quite as good as some others from the point of view of the association with medical schools; but the fact that the city of Salisbury has spent $304,000 and the U. S. Government has spent $1,030,000 on the site more than outweighed this consideration, and it was determined to use the site which was originally selected for a hospital and abandoned when the Veterans Administration construction program was cut back earlier this year.

Before the Administrator announced his decision, the chief medical director (Dr. Paul B. Magnuson) and assistant administrators concerned in locating hospitals, were consulted and all participated in the application of the formula to this particular selection. They were unanimous in their agreement on the selection and the use of the formula for future hospital sites.

## NEW HOSPITAL MANAGERS

The Veterans Administration announces the following appointments: Dr. John F. Bresnahan to be manager of the hospital at Fayetteville, Ark., replacing Dr. Frank N. Gordon, who retired on account of age; Dr. Louis V. J. Lopez to be manager of the hospital at Fort Meade, S. D., succeeding Dr. Harold E. Foster, who died April 19; Dr. George S. Littell to succeed Dr. Bresnahan, who formerly was manager of the Wichita hospital, Kansas.

## PERSONAL

Dr. John W. Claiborne became manager of the Veterans Hospital at Jefferson Barracks, Mo., July 24, replacing Dr. Walter A. German, who became chief medical officer in the Veterans Administration Regional Office at Miami, Fla.

Roger J. O. Cumming, formerly of Minneapolis, has been appointed chief of the Veterans Administration social service division, effective August 29. Mr. Cumming obtained his master's degree from the University of Chicago's School of Social Service Administration. He served in the Navy during World War II.

Dr. Hayden H. Donahue has resigned from the staff of the Fort Roots Veterans Hospital, Arkansas, and has become director of research and education at the Arkansas State Hospital for Mental Diseases. He also is an associate professor of neuropsychiatry at the University of Arkansas School of Medicine.

Dr. Francis A. Bulawa of Charles City, Iowa, has joined the orthopedic staff of the veterans hospital at St. Petersburg, Fla. Dr. Bulawa served in the Navy in the Pacific during the recent war.

Dr. Michael Matte is now the chief medical officer at the veterans' hospital at Wood, Wis. Before this assignment he was chief of the hospital section of the medical division in the central office of the Veterans Administration in Washington, D. C.

Dr. David B. Witt became chief medical officer of the Veterans Administration office at Champaign, Ill., August 8.

# SECRETARY OF DEFENSE

## DRS. ALLEN AND MEILING TAKE OATHS AS DIVISION CHIEFS

Drs. Raymond B. Allen and Richard L. Meiling were sworn in July 6 by Secretary of Defense Louis Johnson as Director and Deputy Director, respectively, of the newly formed Medical Services Division of the National Military Establishment. Dr. Allen, who is President of the University of Washington, Seattle, will remain as Director of Medical Services for three months, returning to the University of Washington on October 1. At that time Dr. Meiling, who is on the staff of the College of Medicine of Ohio State University, Columbus, will be appointed Director. The ceremony in Secretary Johnson's office was witnessed by top officials of the National Military Establishment and other government agencies.

## SIXTY-THREE MORE BOARDS AND COMMITTEES ABOLISHED

Secretary of Defense Louis Johnson announced July 21 the abolition of 63 more boards and committees in the National Military Establishment. The groups were found either to have completed the work for which they were established or to be duplicating the functions of other organizations. Among the groups thus abolished were: (1) the Board to Study the U. S. Navy Band, (2) the Air Force Human Resources Board, (3) the Committee on Implementation of the Randolph Health Act and Foreign Service Act of 1946 and (4) the Army Information Committee. The total of committees and boards discontinued since April 1, 1949 is now 133.

# PUBLIC HEALTH SERVICE

## INSPECTION TRIP TO PUERTO RICO

Dr. Raymond B. Allen, director, Medical Services Division, National Military Establishment, arrived in San Juan, Puerto Rico, July 17, with an inspection party of military medical officers, including Dr. Richard L. Meiling, deputy director, the Surgeons General of the Army and Navy and Air Corps and Rear Admiral Joel T. Boone of the U. S. Navy. They visited the Naval Station Dispensary at San Juan, Rodriguez General Hospital, the Veterans Administration Hospital (San Patricio) and the Army Medical Laboratory. They were entertained by Admiral D. E. Barbey and General Sibert. Among the guests were: Dr. Dwight S. Stevenson, director of the Presbyterian Hospital; Dr. Davis J. Zaugg, director of U. S. Public Health Service; Dr. Guillermo Arbona, commissioner of health; Dr. Enrique Koppisch, acting director of the School of Tropical Medicine, and Dr. Jaime Serra Chavarry, manager, Veterans Administration of Puerto Rico.

# Medical News

**(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)**

## ARKANSAS

**Dr. Wells Heads Department.**—Dr. Benjamin B. Wells, director of cancer research at the M. D. Anderson Hospital for Cancer Research, Houston, Texas, assumed his duties July 1 as head of the department of internal medicine at the University of Arkansas School of Medicine, Little Rock. Dr. Wells, a graduate of Baylor University College of Medicine, Houston, 1935, served on the faculty of the University of Arkansas from 1946 to 1948 as professor of medicine and also as dean the last year.

## CALIFORNIA

**St. John's Hospital Fall Clinic.**—St. John's Hospital, Santa Monica, will present its first Annual Fall Clinic September 12-14. The program includes symposiums on hyperthyroidism, the genitourinary system and jaundice; seminars in obstetrics and gynecology, pediatrics and hematology; a clinical pathologic conference, and peripheral-vascular clinic. Out of state guest speakers include Drs. Percy J. Carroll, Harry H. McCarthy and Louis D. McGuire, Omaha, Neb.; Malcolm B. Dockerty, Rochester, Minn., and Cyrus C. Sturgis, Ann Arbor, Mich. All interested physicians are invited to attend.

**Grants for Cardiovascular Research.**—Grants totaling $11,820 to six Los Angeles County researchers for work in cardiovascular disease have been announced by the Los Angeles Heart Association, the Los Angeles County Tuberculosis and *Health Association, and the A. M. Roberts Memorial Fund,* administered by the Heart Division of the tuberculosis association. The research workers are: Dr. Thomas H. Brem, Veterans Hospital, Van Nuys; Dr. Harry Goldblatt, director of the Cedars of Lebanon Hospital Institute for Medical Research, Los Angeles; Drs. George C. Griffith, Helen E. Martin and Douglas R. Drury, University of Southern California Medical School, Los Angeles, and Dr. Travis Winsor, medical director, Nash Foundation, Hospital of the Good Samaritan, Los Angeles.

## INDIANA

**Governor Appoints Tuberculosis Council.**—A seven member Indiana Tuberculosis Council to aid the Indiana State Board of Health in the treatment and care of tuberculosis was recently appointed by Governor Henry F. Schricker. The council was established by the 1949 General Assembly. Physician appointees are: Dr. Warren S. Tucker, Indianapolis, one year; Dr. Thomas R. Owens, Muncie, one year, and Dr. John R. Matthews, North Judson, two years. Laymen include Murray A. Auerbach, Indianapolis, executive secretary, two years; Robert O'Bannon, Corydon, four years, and Custis Hostetter, Lafayette, four years.

**Personals.**—Dr. A. David McKinley, who practiced medicine in Speedway before entering service in World War II, has been appointed assistant medical director for the Indiana University Medical Center Hospitals in Indianapolis. Dr. McKinley received his M.D. degree from Indiana University School of Medicine, Indianapolis, in 1939.——Dr. Earl W. Mericle, Indianapolis, has been appointed by Gov. Henry F. Schricker to the Indiana Council for Mental Health to succeed Dr. E. Rogers Smith, also of Indianapolis, who resigned.——James A. Waggener, public relations director for the Indiana Blue Cross-Blue Shield organizations for two years, has become field secretary of the Indiana State Medical Association.

## KANSAS

**Dr. Sutton Heads Department of Dermatology.**—Dr. Richard L. Sutton Jr., Kansas City, became chairman of the department of dermatology at the University of Kansas School of Medicine, Lawrence-Kansas City, July 1, succeeding Dr. Charles C. Dennie, who has reached the retirement age for university executives. A graduate of the University of Michigan Medical School, Ann Arbor, 1929, Dr. Sutton was an associate professor of dermatology at the University of Kansas School of Medicine from 1943 to 1946. He was a major in the medical corp of the U. S. Army and chief of the skin and syphilis section of the Woodrow Wilson General Hospital, Staunton, Va. He is on the staffs of the Ellis Fischel State Cancer Hospital and the University Hospital in Columbia, and Kansas City General, Menorah, and St. Lukes hospitals in Kansas City. Dr. Dennie has been a member of the faculty for 32 years and chairman of the department for 10 years.

## MAINE

**State Medical Election.**—The Maine Medical Association at its meeting in Poland Springs in June installed Dr. Ralph A. Goodwin of Auburn as president and chose Dr. Foster C. Small, Belfast, president-elect.

**Reorganize Administration of Jackson Laboratory.**—As a part of plans for broad reorganization and extension of the staff of the Jackson Memorial Laboratory in Bar Harbor, George Davis Snell has been appointed scientific administrator. He will work with another executive under the director, Clarence C. Little, Sc.D. Dr. Snell received his Sc.D. degree from Harvard University in 1930 and since 1935 has been a research associate, a member of the staff and, in recent years, a trustee of the laboratory, as well as chairman of a number of important committees.

## MASSACHUSETTS

**Warren Triennial Prize.**—The Warren Triennial Prize for the best dissertation on some special subject in physiology, surgery or pathology will be awarded this year. Essays may be written in English, French or German and must be typewritten and suitably bound. Work that has previously been published will not be considered, and original work will be given a high value. Essays will be received until November 15. The awards will consist of a first prize of $1,500 and a second prize of $500. The judges will be the General Executive Committee of the Massachusetts General Hospital, Boston.

**Psychiatric Study Grant.**—The U. S. Public Health Service under the National Mental Health Act has approved a grant for a trainee in psychiatry at the Walter E. Fernald State *School situated 8 miles from Boston. The stipend for this level* is $3,000 per year, but candidates at lower levels may be considered. Training will be offered in mental deficiency, child psychiatry and related psychiatric and neurologic problems through supervised experience in the outpatient, inpatient, research laboratory, psychologic, education and social service departments, as well as participation in staff meetings, seminars in basic psychiatry and neurology and in child psychiatry. Applications or requests for further information should be forwarded to Dr. Malcolm J. Farrell, Superintendent, Walter E. Fernald State School, Waverley 78.

## MISSOURI

**County Health Forum Lectures.**—The Jackson County Health Forum Lecture Series, sponsored by the hospital auxiliaries of the accredited hospitals of Jackson County, will begin September 21 and continue each month, except December, through April. These public lectures are held at 8:15 p. m. at the Little Theatre of the Municipal Auditorium in Kansas City and are free of charge. The program is as follows:

Sept. 21, Howard B. Sprague, Boston, Heart and Circulation.
Oct. 19, Austin Smith, Assistant Editor, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Chicago, Modern Miracles in Drugs.
Nov. 23, Lawrence T. Post, St. Louis, Your Sight and Your Glasses.
Jan. 18, William P. Holbrook, Tucson, Ariz., Arthritis and Rheumatism.
Feb. 15, George H. Mohr, Chicago, Everybody's Problem.
March 15, Walter C. Alvarez, Rochester, Minn., Nervous Indigestion.
April 19, Morris Fishbein, Editor, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Chronic Diseases and the Aged.

## NEW YORK

**Honor Veteran Physicians.**—The Medical Society of the County of Niagara on June 14 honored county physicians who had practiced medicine for more than 50 years. Those cited were Dr. William H. Hodge, Niagara Falls, who has practiced 60 years in the county; Dr. Heinrich C. Leonhardt, North Tonawanda, 59 years; Dr. William G. Sprague of Barker and Dr. Thomas J. McBlain, Lewiston, 58 years each; Dr. Murray Mudge, Middleport, 54 years; Drs. Norman W. Price, Niagara Falls, and Carl A. Blackley, Lockport, 53 years each; Drs. Lyman H. Wheeler, Lockport, Clayton R. Clarke, Ransomville, and Henry C. Lapp, North Tonawanda, 52 years each; and Dr. E. Herbert Purvis, Lockport, 50 years. Also honored were Dr. Elbert A. Palmer, Niagara Falls, who has practiced medicine in the county and elsewhere for 53 years and Dr. Samuel Outwater, Lockport, who has practiced 70 years in Buffalo and in California.

## New York City

**Society of Medical Jurisprudence.**—Twenty-two representatives of the medical and legal professions on June 1 organized the Brooklyn Society of Medical Jurisprudence under the leadership of Dr. George I. Swetlow, Brooklyn. The active membership will be composed of the active members of the medical, legal and dental professions.

**Dr. Lough Honored.**—After 37 years of teaching and medical practice Dr. Walter G. Lough will retire August 31 from his duties as professor and chairman of the department of medicine, New York University Post-Graduate Medical School, and director of the medical service, University Hospital. A testimonial dinner in his honor was given at the Waldorf-Astoria Hotel, June 21.

**Seton Hospital Affiliates with Medical College.**—A teaching affiliation in the specialty of pulmonary diseases has been arranged between Seton Hospital and the New York Medical College, Flower and Fifth Avenue Hospitals. As soon as practicable graduate training will be undertaken, and in the future undergraduate instruction may also be instituted. The affiliation will provide a source of residents for the hospital and offers another institution to the college for specialized training in the field of pulmonary diseases. The 429 bed tuberculosis institution was taken over by the city May 1, 1949. Dr. Allen Kane is the medical superintendent.

**Faculty Changes at Long Island College.**—The following changes in the faculty of the Long Island College of Medicine have been announced: Dr. Charles A. Gordon, a member of the faculty since 1923, has been named emeritus professor of obstetrics and gynecology, and Dr. Carl H. Laws, associated with the college since 1917, has been made a professor emeritus of pediatrics. Retiring by reason of mandatory age requirements are Dr. Milton G. Wasch, associate professor of clinical radiology and attending resident at the Jewish Hospital of Brooklyn since 1916, where he conducted his teaching duties; and Dr. Harry W. Mayes, a member of the department of obstetrics and gynecology for a number of years, conducting his teaching assignments at the Methodist Hospital of Brooklyn.

**Public Health Research Institute.**—The city of New York has signed a seventeen year extension of its contract with the Public Health Research Institute whereby the city will grant to the institute $300,000 annually for two years and $400,000 annually for the remaining fifteen years of the contract. Chartered in 1941, the institute since 1945 has been receiving $200,000 each year from the city for a cooperative medical research program. The Public Health Research Institute is a nonprofit membership corporation, the research activities of which are under the direction of a council of scientists; Dr. Thomas M. Rivers, director, Hospital of the Rockefeller Institute for Medical Research, is the chairman. Dr. Walter W. Palmer, professor emeritus, Columbia University College of Physicians and Surgeons, is director of the institute. The institute already has served the city by improved methods of measuring nutrition, better means of preserving blood for transfusion, evaluation of dangers in continuous and indiscriminate use of sulfonamide drugs, better immunization technics and development of a virus diagnostic laboratory.

## TEXAS

**Open Medicolegal Laboratory.**—A medicolegal laboratory, operated under a cooperative arrangement of the county, the University of Texas and the M. D. Anderson Foundation, was established recently in Houston. Located in the basement of Jefferson Davis Hospital, the laboratory is headed by Dr. W. W. Coulter Sr., chief pathologist at the hospital, with Dr. Charles A. Dwyer Jr., county physician, as his assistant. The laboratory, which will be used in teaching medicolegal pathology in the University of Texas Postgraduate School of Medicine, is under the general direction of Dr. William O. Russell, head of the department of pathology of the University of Texas Medical Branch, Galveston.

**Dr. Livingood to Head Department.**—Dr. Clarence S. Livingood, assistant professor of dermatology and syphilogy and head of the department at Jefferson Medical College, Philadelphia, has been named professor of dermatology and syphilology at the University of Texas Medical Branch, Galveston. Dr. Livingood, a graduate of the University of Pennsylvania, Philadelphia, 1936, is also an assistant professor in his field at the Graduate Medical School of the University of Pennsylvania in Philadelphia. Other appointments to the faculty include that of Dr. Elwood E. Baird, professor of clinical pathology at the University of Colorado School of Medicine, Denver, as professor of clinical pathology in charge of the clinical laboratories at the University of Texas Medical Branch Hospital.

## PUERTO RICO

**Hospital Construction.**—A master plan for the construction of three hospitals in Southern Puerto Rico, preferably in the city of Ponce, has been prepared by the Hospital Survey and Construction Agency, a division of the Insular Health Department, in cooperation with the U. S. Public Health Service. Preliminary plans are now under way for the construction with federal and insular funds of a 500 bed tuberculosis hospital, a 1,000 bed mental hospital and a 400 bed general hospital. These three hospitals will be constructed as soon as an amendment to the Hospital Survey and Construction Act of 1946 is approved by the United States Congress, extending the life of this legislation to 1955 and increasing the allocation of federal funds to twice the present appropriations. The law provides an allocation of $2,400,000 for the fiscal year 1948-1949, already received by Puerto Rico, and a similar amount for the fiscal year 1949-1950 for investment in an islandwide hospital construction and improvement program. Out of these funds, according to insular health officials, Puerto Rico will construct before 1951 the Ponce General District Hospital, costing $3,000,000. It will have a chronic disease section for the treatment of cancer and renal and heart diseases. The federal government pays one third of the cost of these units, and the balance is paid with insular funds.

Julio A. Pérez, director of the Office of Puerto Rico in Washington, D. C., who until recently was executive secretary of the Hospital Survey and Construction Agency, has been inspecting hospitals in the United States to obtain reliable information of surgical treatment and installations for chest disease operations that will be purchased for the Ponce tuberculosis hospital.

If the amendment to the Hospital Survey and Construction Act now under consideration in Congress is finally approved, a sliding scale of funds will be provided through which the federal government will match up to two thirds of the cost of several projects. A master plan for the construction of all hospital units in Puerto Rico has been approved by the Puerto Rico planning board on the basis of the actual legislation. This means that, with additional federal funds to match insular funds, the plan will be enlarged accordingly.

## GENERAL

**Change Journal's Editorial Office.**—At the June 1949 meeting of the Society for Investigative Dermatology, Dr. Naomi M. Kanof, Washington, D. C., was appointed chairman of the editorial board and Dr. Marion Sulzberger, New York, was named chief editorial consultant. Manuscripts and inquiries should be addressed to the editorial office of the *Journal of Investigative Dermatology* at 1150 Connecticut Avenue N.W., Washington 6, D. C.

**International Congress on Cancer.**—The fifth International Congress for Scientific Research and the Social Fight Against Cancer is to be held at the Sorbonne in Paris July 17-22, 1950. Dr. A. Lacasagne is president of the congress. Participation is open to members of well known scientific and social associations or to men recommended by members of the executive committees as well as the organizations affiliated with the union. Correspondence can be directed to Prof. V. LeLorier, Secretary-General of the Congress, 6 Avenue Marceau, Paris 8, France.

**International Congress of Military Medicine.** — The Twelfth International Congress of Military Medicine and Pharmacy will be held in México, D. F., October 23-29. Topics under discussion include new medicosocial problems in the army; pathology and treatment of lesions caused by the atomic bomb; the psychoses of war and the biochemical study of the minimum ration of the combat soldier; maxillofacial wounds; air transport for the medical services to the combat forces, and the study of medicaments. This congress will be followed, on November 6-8, by the twelfth session of the Conference of the International Office of Documentation of Military Medicine in Havana. The association on November 7 will take up the subjects: reparative surgery of maxillofacial wounds, project of codification of international medical law and the outlook for medicine in times of war. The International Committee of Military Medicine and Pharmacy will also meet.

**"Uniform Salesman" Racket.**—A man calling himself H. D. Hunter and representing himself as a salesman for the Hoover Manufacturing Sales Company, 251 West 19th Street, New York 11, has been accepting orders and cash deposits for nurses' uniforms in Greenville, S. C. This man is not a legal representative and is not connected with this company. He has been apprehended previously and tried and convicted fo *obtaining money under false pretenses by working this same* racket. H. D. Hunter is described as being between 45 and 50 years of age, 5 feet 6 inches tall and approximately 170 pounds in weight. He has brownish black hair, graying at the temples. He wears tortoise-shell-rimmed glasses and appears to be Jewish. He is courteous and gentlemanly in manner and dresses neatly in business suits. He has a catalog and samples of the Hoover Manufacturing Sales Co. and will accept a check in payment for orders but insists that the check be made payable to him. Any information concerning this man should be addressed to Detectives L. G. Dill and C. E. Howard, Department of Police, Greenville, S. C.

**Markle Scholars in Medical Science Nominations.**—The John and Mary R. Markle Foundation invites deans of accredited medical schools in the United States and Canada to make nominations for the third group of scholars in medical science on or before Dec. 1, 1949. Each school may nominate one candidate. The purpose of the scholar program is to help promising young men and women with a strong interest in teaching and research to become established in academic medicine. Candidates should have completed the usual fellowship training in some area of science related to medicine and should hold, or expect to hold, in the academic year 1950-1951 a full time faculty appointment on the staff of a medical school. Grants of $250,000, payable at the rate of $5,000 annually, will be made to the schools over a five year period for the support of each scholar finally selected, his research, or both. The number of scholars to be appointed in 1950 has not yet been determined. Sixteen were chosen in 1948 and thirteen in 1949. A new booklet describing the plan, with suggestions for making application, is available on request from the Foundation, 14 Wall Street, New York 5, N. Y.

**Obstetricians, Gynecologists and Abdominal Surgeons Meeting.**—The annual meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons will be held at the Homestead, Hot Springs, Va., September 8-10, under the presidency of Dr. James R. Bloss, Huntington, W. Va. Physicians invited to deliver papers at the scientific sessions include:

Douglas W. Sparling, Montreal, Que., Theca Cell Tumors.
Edward C. Hughes, Syracuse, N. Y., Nutritional Value of the Endometrium for Implantation and Habitual Abortion.
Kenneth T. MacFarlane, Montreal, Que., Uterine Sarcoma.
J. Robert Willson, Philadelphia, Management of Excessive Fluid Retention in Normal and Toxemic Pregnancies.

The Foundation Prize Thesis will be given by Dr. Thomas L. Ball, New York, on "Topographic Urethrography" and the *Joseph Price Oration by Mr. Charles D. Read, London, England,* on "Stress Incontinence of Urine" the evening of September 8. Dr. George F. Lull, Secretary, American Medical Association, Chicago, will speak on "National Legislation Affecting the Medical Profession" at the banquet September 9.

**Surgical Congresses.**—The Sixth Inter-American Congress of Surgery will meet as a part of the Thirty-Fifth Clinical Congress of the American College of Surgeons from October 17-21, with headquarters at the Stevens Hotel, Chicago, and will continue on October 21-23 with its own sessions, most of which will be held in the John B. Murphy Memorial Auditorium of the college. This will be the first time that the Inter-American Congress of Surgery has been held in the United States. The scientific sessions, scheduled for Saturday and Sunday afternoon, will center around three main themes: Acute Craniocerebral Trauma, with Dr. E. Jefferson Browder, Brooklyn, as the main speaker; Treatment of Injuries in the Region of the Ankle with Complications and Sequelae, with Dr. Harrison L. McLaughlin of New York as main speaker, and Pulmonary Carcinoma, with Dr. Evarts A. Graham, St. Louis, as main speaker. Each surgical society outside the United States and Canada which is represented will appoint a discussion leader, or correlator, for each of the themes. Between two and three hundred Latin-American surgeons are expected to attend the sessions, which will also be open to fellows from the United States and Canada. At the Clinical Congress of the American College of Surgeons Sir James R. Learmonth of Edinburgh will deliver the Martin Memorial Lecture October 17. Lord Webb-Johnson, London, president of the Royal College of Surgeons of England, will deliver the fellowship address at the convocation Friday evening. Television of operations in color from St. Luke's Hospital to the Stevens will be on each day's program during the Clinical Congress. Other events will include scientific sessions, official meetings, hospital conferences, medical motion picture showings, technical and scientific exhibits and operative and nonoperative clinics in the Chicago area.

**Prevalence of Poliomyelitis.**—*Reports of cases of polio*myelitis for the periods indicated have been received from the Division of Public Health Methods, U. S. Public Health Service:

| | Week Ended | | | Total to | | Total * | |
|---|---|---|---|---|---|---|---|
| | July 30, 1949 | July 31, 1943 | Median Expec. | July 30, 1949 | July 31, 1948 | March 19-July 30, 1949 | March 20-July 31, 1948 |
| New England States: | | | | | | | |
| Maine | 15 | 3 | .. | 63 | 4 | 63 | 4 |
| New Hampshire | 1 | 1 | 1 | 9 | 4 | 9 | 4 |
| Vermont | 1 | .. | .. | 7 | 3 | 5 | 2 |
| Massachusetts | 33 | 5 | 5 | 133 | 16 | 133 | 13 |
| Rhode Island | .. | .. | .. | 7 | .. | 7 | .. |
| Connecticut | 14 | 10 | 6 | 49 | 18 | 46 | 17 |
| Middle Atlantic States: | | | | | | | |
| New York | 200 | 51 | 51 | 472 | 190 | 452 | 154 |
| New Jersey | 27 | 21 | 8 | 133 | 103 | 97 | 96 |
| Pennsylvania | 17 | 24 | 16 | 65 | 89 | 55 | 78 |
| East North Central States: | | | | | | | |
| Ohio | 65 | 44 | 38 | 156 | 177 | 150 | 168 |
| Indiana | 83 | 19 | 11 | 274 | 82 | 264 | 72 |
| Illinois | 145 | 32 | 15 | 349 | 113 | 333 | 106 |
| Michigan | 149 | 18 | 13 | 332 | 57 | 305 | 51 |
| Wisconsin | 47 | 15 | 6 | 119 | 43 | 105 | 43 |
| West North Central States: | | | | | | | |
| Minnesota | 91 | 38 | 8 | 356 | 91 | 317 | 83 |
| Iowa | 83 | 47 | 4 | 208 | 164 | 195 | 151 |
| Missouri | 194 | 17 | 2 | 365 | 46 | 354 | 46 |
| North Dakota | 18 | .. | .. | 81 | 6 | 77 | 6 |
| South Dakota | 32 | 2 | .. | 86 | 36 | 64 | 36 |
| Nebraska | 23 | 28 | 13 | 97 | 122 | 84 | 117 |
| Kansas | 68 | 8 | 8 | 205 | 52 | 179 | 49 |
| South Atlantic States: | | | | | | | |
| Delaware | 1 | 10 | 1 | 11 | 50 | 9 | 49 |
| Maryland | 7 | 4 | 6 | 27 | 7 | 18 | 6 |
| District of Columbia | 1 | 4 | 4 | 13 | 14 | 12 | 14 |
| Virginia | 13 | 42 | 22 | 55 | 113 | 45 | 111 |
| West Virginia | 24 | 9 | 2 | 92 | 21 | 85 | 16 |
| North Carolina | 15 | 210 | 3 | 99† | 1,098 | 72 | 1,074 |
| South Carolina | 8 | 50 | 2 | 40 | 124 | 27 | 116 |
| Georgia | 9 | 21 | 8 | 67 | 77 | 59 | 76 |
| Florida | 8 | 23 | 6 | 93 | 116 | 71 | 99 |
| East South Central States: | | | | | | | |
| Kentucky | 47 | 11 | 4 | 150 | 55 | 142 | 52 |
| Tennessee | 48 | 28 | 10 | 169 | 78 | 163 | 71 |
| Alabama | 16 | 9 | 9 | 113 | 64 | 100 | 52 |
| Mississippi | 12 | 8 | 1 | 132 | 47 | 121 | 45 |
| West South Central States: | | | | | | | |
| Arkansas | 73 | 9 | 2 | 490† | 51 | 479 | 49 |
| Louisiana | 6 | 5 | 6 | 96 | 47 | 84 | 41 |
| Oklahoma | 96 | 33 | 12 | 521 | 119 | 514 | 113 |
| Texas | 95 | 82 | 40 | 1,203 | 960 | 1,112 | 939 |
| Mountain States: | | | | | | | |
| Montana | 1 | 1 | 1 | 11 | 22 | 10 | 12 |
| Idaho | 30 | 9 | 1 | 126 | 65 | 113 | 38 |
| Wyoming | 2 | 13 | 2 | 16 | 27 | 16 | 27 |
| Colorado | 21 | 2 | 2 | 77 | 21 | 75 | 19 |
| New Mexico | 5 | 5 | 3 | 49 | 23 | 48 | 21 |
| Arizona | 8 | 1 | 1 | 38 | 28 | 27 | 27 |
| Utah | 5 | 5 | 5 | 60 | 20 | 44 | 17 |
| Nevada | .. | .. | .. | 8 | 1 | 8 | .. |
| Pacific States: | | | | | | | |
| Washington | 16 | 9 | 9 | 119 | 66 | 74 | 48 |
| Oregon | 3 | 3 | 3 | 63 | 36 | 47 | 20 |
| California | 87 | 224 | 21 | 795 | 1,027 | 506 | 995 |
| Total | 1,963 | 1,213 | ... | 8,299† | 5,793 | 7,375 | 5,443 |
| Median, 1944-1948 | ... | ... | 740 | 3,060 | | 2,797 | |

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* Last two columns show reported incidence since approximate average seasonal low: 18 weeks.

† Figures changed by corrected reports.

# Marriages

Joan K. Barber, Brooklyn, to Dr. Frederic T. Kirkham Jr., of San Antonio, Texas, in Sea Girt, N. J., June 16.

Richard Michael Kafka, Tampa, Fla., to Miss Mary Elizabeth Nipher at Silver Springs, Md., June 5.

Richard Winston Thaler, Knoxville, Tenn., to Miss Victoria Louise Sears in Braintree, Mass., June 18.

William Ashley Cherry, New Orleans, to Dr. Flora Finch of McComb, Miss., June 9.

William Paul Doremus to Miss Barbara Madeline Wilcox, both of New York, June 12.

Albert Joseph Baroody, Columbia, S. C., to Miss Hazel Haskins of Ninety-Six, May 14.

William C. Feldman, Kingston, N. Y., to Miss Arline Karu in New York, June 18.

# Deaths

**Rafe Nelson Hatt,** Honolulu, Hawaii; born in West Paris, Maine, Nov. 11, 1889; Tufts College Medical School, Boston, 1918; member of the American Medical Association, American Orthopaedic Association and the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons; served overseas during World War II; formerly member of the Massachusetts Public Health Council; chief surgeon at the Shriners' Hospital for Crippled Children; for many years practiced in Springfield, Mass., where he was past president of the Springfield Academy of Medicine, chief surgeon at the Shriners' Hospital for Crippled Children, and consulting orthopedic surgeon, Springfield and Wesson Memorial hospitals; in 1938 awarded the honorary degree of Master of Arts by the Colby College in Waterville, Maine; died May 27, aged 59, of coronary thrombosis.

**Walter Asahel Hoyt** ⊕ Akron, Ohio; born in Grass Lake, Mich., April 17, 1887; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1912; past president of the Summit County Medical Society; specialist certified by the American Board of Orthopaedic Surgery; in 1941 the American Medical Association awarded him the Certificate of Merit for an exhibit on the treatment of acute osteomyelitis with sulfathiazole without operation and in 1942 the American Academy of Orthopaedic Surgeons, of which he was a member, awarded him the gold medal for the same exhibit; member of the Clinical Orthopaedic Society; fellow of the American College of Surgeons; formerly on the professional advisory committee of the state welfare department; on the staffs of the City, Children's and St. Thomas hospitals; died May 31, aged 62, of carcinoma.

**Ira Bradford Chadwick** ⊕ Coffeyville, Kansas; born in Hamilton County, Iowa, Dec. 7, 1869; Medico-Chirurgical College of Kansas City, Mo., 1902; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during World War I; on the staff of the Coffeyville Memorial Hospital; died in the Veterans Administration Hospital, Muskogee, Okla., June 16, aged 79, of carcinoma of the cecum.

**Nelson Miles Black Jr.,** ⊕ Miami, Fla.; University of Pennsylvania School of Medicine, Philadelphia, 1939; served during World War II; for outstanding heroism displayed at Army Air Base APO 215 on Dec. 24, 1944, was awarded the Soldier's Medal; died June 9, aged 36.

**Charles Bock** ⊕ Los Angeles; Fort Wayne (Ind.) College of Medicine, 1897; died May 31, aged 79, of heart failure.

**Ritchie Lilburne Byrd,** St. Louis; Beaumont Hospital Medical College, St. Louis, 1899; died in De Paul Hospital June 22, aged 75, of heart disease.

**William Tenney Cannon,** Salt Lake City; Medico-Chirurgical College of Philadelphia, 1899; member of the American Medical Association; affiliated with the Dr. W. H. Groves Latter-Day Saints Hospital; died May 21, aged 78, of heart disease.

**Damase Caron,** Manchester, N. H.; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, Canada, 1900; member of the American Medical Association; formerly mayor; affiliated with Notre Dame de Lourdes Hospital, Manchester, and the Hillsborough County General Hospital, Grasmere; died June 9, aged 73, of chronic myocarditis, bilateral lobar pneumonia, chronic nephritis and cardiorenal decompensation.

**Margaret Green Cartwright,** Albuquerque, N. Mex.; Woman's Medical College, Chicago, 1890; died in Mount Eden, Calif., April 28, aged 83.

**Rae Hazen Cather** ⊕ Barberton, Ohio; College of Physicians and Surgeons, Baltimore, 1914; affiliated with Citizens Hospital, where he died June 11, aged 61, of coronary occlusion.

**Elizabeth Francis C. Clark** ⊕ Ventnor, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1909; member of the Medical Society of the State of Pennsylvania; served on the staff of Woman's Hospital in Philadelphia; died June 28, aged 69.

**Ralph Thurman Clark,** Springfield, Ill.; Northwestern University Medical School, Chicago, 1928; member of the American Medical Association; served during World War I; affiliated with St. John's Hospital and Memorial Hospital, where he died June 6, aged 53, of cerebral hemorrhage.

**Susan May Coffin,** Cochituate, Mass.; Boston University School of Medicine, 1910; member of the American Medical Association and the New England Pediatric Society; died June 1, aged 68.

**Charles James Cole** ⊕ Elkins Park, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1914; member of the American Academy of Pediatrics; served in France during World War I; died in the Abington (Pa.) Memorial Hospital June 22, aged 62.

**Albert J. Colton,** Buffalo; Niagara University Medical Department, Buffalo, 1890; member of the American Medical Association; invented the card index system bearing his name; affiliated with the Sisters of Charity Hospital; died June 18, aged 85, of heart disease.

**Patrick John Conroy,** Syracuse, N. Y.; University of the South Medical Department, Sewanee, Tenn., 1900; member of the American Medical Association; for many years associated with the medical department of the county welfare department; died June 11, aged 71, of heart disease.

**J. R. Crigler,** Alma, Ark.; Memphis (Tenn.) Hospital Medical College, 1900; member of the American Medical Association; affiliated with St. Edward's Mercy and Sparks' Memorial hospitals in Fort Smith; died May 7, aged 73, of left ventricular failure.

**Stephen James Dalton,** Brookline, Mass.; Tufts College Medical School, Boston, 1916; served during World Wars I and II; chief medical officer for the Veterans Administration in Boston; died in Wareham, Mass., May 11, aged 54, of carcinoma of the intestine.

**Arthur Putnam Derby,** Detroit; University of Virginia Department of Medicine, Charlottesville, 1904; member of the American Medical Association; served on the staff of the Herman Kiefer Hospital; died June 5, aged 71.

**Arthur Bland Donovan,** Boston; Tufts College Medical School, Boston, 1923; member of the American Medical Association and the National Gastroenterological Association; chief surgeon of the Lumbermen's Mutual Casualty Company; served on the staffs of Boston Lying-In Hospital, Harley Hospital and St. Margaret's Hospital, where he died June 22, aged 51.

**Samuel Bonner Eisler,** Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1911; died May 22, aged 60.

**Samuel Elgart** ⊕ Cincinnati; Tufts College Medical School, Boston, 1938; specialist certified by the American Board of Internal Medicine; certified by the National Board of Medical Examiners; member of the American Diabetes Association and the Association for the Study of Internal Secretions; affiliated with Hamilton County Home and Chronic Disease Hospital, Cincinnati General Hospital and the Jewish Hospital, where he died June 18, aged 37, of heart disease.

**John Gustaf Ericson,** Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1892; affiliated with Swedish Hospital; fellow of the American College of Surgeons; died May 14, aged 81, of coronary thrombosis.

**Daniel Warren Evhans,** Yakima, Wash.; Marquette University School of Medicine, Milwaukee, 1944; interned at St. Joseph's Hospital in Milwaukee; served a residency in medicine at Methodist Hospital in Madison, Wis.; a lieutenant (jg) U. S. Naval Reserve during World War II, affiliated with St. Elizabeth's Hospital; died in Seattle, May 6, aged 32, of tuberculosis.

**George Benjamin Faulder** ⊕ Wapakoneta, Ohio; University of Michigan Homeopathic Medical School, Ann Arbor, 1914; served as member and president of the school board; an officer during World War I, serving overseas; affiliated with St. Rita's and the Memorial Hospital in Lima; died in the Toledo (Ohio) Hospital May 13, aged 57, of coronary thrombosis.

**Morris Feldman** ⊕ Chicago; Loyola University School of Medicine, Chicago, 1928; served during World War II; died June 21, aged 51, of coronary thrombosis.

**Joseph Leo Ferris** ⊕ St. Louis; St. Louis University School of Medicine, 1917; senior instructor in surgery at his alma mater; affiliated with the Alexian Brothers' and St. Anthony's hospitals and St. Mary's Group of Hospitals; died June 6, aged 58, of coronary disease.

**Ralph Mitchell Fouch,** Portland, Ore.; University of Nebraska College of Medicine, Omaha, 1921; member of the American Medical Association; died recently, aged 57, of heart disease.

**John William Freed,** Staunton, Va.; University of Virginia Department of Medicine, Charlottesville, 1901; member of the American Medical Association; affiliated with Western State Hospital; died June 2, aged 74.

# Foreign Letters

## BRAZIL

*(From Our Regular Correspondent)*

RIO DE JANEIRO, July 6, 1949.

### Clinical Study of Chagas' Disease

The Oswaldo Cruz Institute was established in 1944 at Bambuhy, state of Minas Gerais. This is a center for the study of American trypanosomiasis (Chagas' disease). Since then a clinicoepidemiologic survey of the population, which consists essentially of workers for the Rede Mineira Railroad and their families, has disclosed more than 600 patients with the disease; 103 had an acute form and 505 chronic. On the basis of this study, Dr. F. S. Laranja, Dr. Emmanuel Dias and Dr. Genard Nobrega, in charge of the Bambuhy center, have just published a valuable report on the clinical and therapeutic aspects of American trypanosomiasis, a disease which is gaining importance in the tropical and subtropical rural districts of the Americas.

The authors have made a revision of the clinical forms of the disease and suggest a new classification: (*a*) acute form and (*b*) chronic form: (1) chronic indeterminate form (potential heart disease) and (2) chronic cardiac form (chronic Chagas' heart disease). Nervous manifestations of the kind described as the chronic nervous form of schizotrypanosis have not been observed in the cases studied at Bambuhy. Clinical and experimental evidence supports the view that chronic Chagas' heart disease is a well established clinical entity. In the acute infection they stress that two kinds of edema may occur: local edema of the parasite's portal of entrance and generalized edema, the so-called "myxedema." According to their observations the generalized edema may be related to the presence of hypoproteinemia, while the local edema seems to be of inflammatory origin. The manifestations of acute Chagas' heart disease also are described. Gallop rhythm, enlargement of the cardiac shadow (in some cases due to pericardial effusion), prolongation of the P-R interval, primary T wave changes and ventricular premature contractions are the more important diagnostic signs of acute Chagas' heart disease. Right bundle branch block occurred in 3 fatal cases of acute Chagas' heart disease; in 1 of them a pronounced S-T displacement was also present. Death during the acute period of Chagas' disease is usually preceded by convulsions. The manifestations of the acute infection subside spontaneously and gradually in most cases; the disease then develops into the chronic stage and the patients become apparently cured, although still infected.

Patients with chronic infection and without evidences of heart involvement are considered potential patients with heart disease and classified in the group with the chronic indeterminate form of the disease. Infection remains in the organism, as a rule actively, and signs of heart involvement may develop later. Chronic Chagas' heart disease is usually a late manifestation of the infection. About 50 per cent of chronically infected patients present signs of heart involvement. The manifestations of chronic Chagas' heart disease depend on the severity of myocardial changes. Palpitations, dyspnea, convulsive-syncopal crisis (advanced auriculoventricular block), atypical precordial aches and pain in the upper part of the abdomen (liver congestion) are the commonest symptoms. Some cases do not present any symptoms; the heart is not enlarged, and the only evidence of myocardial damage is provided by the electrocardiogram (asymptomatic Chagas' heart disease). Irregularities of the cardiac rhythm, splitting of the second heart sound at the pulmonary area and gallop rhythm are common auscultatory findings. Heart enlargement involves all the cardiac chambers and is of variable degree. Patients with heart failure usually present pronounced heart enlargement. Signs of cardiac dilatation are predominant over those of cardiac hypertrophy. Signs of valvular deformity or structural changes of the large vessels are not found in this type of heart disease. Blood pressure is usually normal. Patients with heart failure may present reduced systolic pressure and small pulse pressure. Signs of functional valvular incompetence are common in patients with heart failure. Heart failure is usually of the right side or is bilateral, the isolated left side type of heart failure being rather uncommon. In the majority of instances the electrocardiogram reveals disturbances of impulse conduction and/or impulse formation. Ventricular premature contractions, right bundle branch block, auriculoventricular blocks of all degrees and atypical alterations of ventricular complexes are the most important electrocardiographic observations. Right bundle branch block is common in this type of heart disease and is of diagnostic value in endemic areas of schizotrypanosis.

Criteria for differential diagnosis with other types of chronic heart disease have been studied. Evolution of chronic Chagas' heart disease is variable, depending chiefly on the activity of the infection. Most patients die before 50 years of age. Prognosis depends in part on the degree of the enlargement of the heart, the degree of the reduction of the heart's functional capacity and the type of the existing arrythmia. Sudden death occurs commonly in this type of heart disease. Most of the deaths occur in heart failure.

An effective drug is not available for the treatment of Chagas' disease. Better results frequently are obtained with strophanthin than with digitalis in the treatment of heart failure of chronic Chagas' disease.

### Chagas' Disease and Blood Transfusion

Dr. J. Pellegrino reports for the first time the occurrence of Chagas' disease among persons serving as blood donors in Bello Horizonte, state of Minas Gerais. Three persons were found who exhibited strongly positive reactions to complement fixation tests (Schizotrypanum cruzi antigen). Formerly these persons lived in huts infested with Triatoma; 2 did not present signs or symptoms of Chagas' disease, but 1 showed heart trouble (right bundle branch block). The writer emphasizes the necessity for awareness of the dangerous possibility of the spread of Chagas' disease through blood transfusion. He suggests that the complement fixation test for S. cruzi be performed on all before they are admitted as blood donors in countries where the disease exists.

## ITALY

*(From Our Regular Correspondent)*

FLORENCE, June 15, 1949.

### Pneumonias in Asthenic Patients

Reports were presented before the medicosurgical association of the Romagna on pneumonia in asthenic persons and its treatment with antibiotics. Dr. Fontana of Ravenna demonstrated that the progress of anti-infectious therapy has contributed to progress in diagnosis through the criterion "ex adjuvantibus." This progress makes more necessary a rapid diagnostic orientation, thus making early intervention possible in certain diseases, by specific, highly effective treatment.

Pneumonia in old and debilitated persons is a typical example of such a morbid condition. In this group are patients with decompensated heart disease, diabetic patients and those who have had major surgical operations.

The clinical aspects of pneumonia in asthenic persons may include peculiarities which often make a diagnosis difficult; frequently the initial picture is one of grave cardiac insufficiency.

**Frank Lee Frink,** Newman Grove, Neb.; Louisville (Ky.) Medical College, 1891; member of the American Medical Association; formerly mayor and member of the school board; served during World War I; died June 6, aged 83.

**James Sterling Gilfillan,** St. Paul; University of Minnesota College of Medicine and Surgery, Minneapolis, 1897; University of Pennsylvania Department of Medicine, Philadelphia, 1898; member of the American Medical Association; formerly on the faculty of his alma mater; died in Miller Hospital June 13, aged 81.

**Samuel McPheeters Glasgow,** Nashville, Tenn.; University of Pennsylvania Department of Medicine, Philadelphia, 1895; assistant professor of clinical gynecology at the Vanderbilt University School of Medicine; fellow of the American College of Surgeons; member of the American Medical Association; served during World War I; for a short time city health officer and superintendent of the Nashville City Hospital; died May 31, aged 79, of coronary thrombosis.

**Harold Joseph Gondolf,** Austin, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1913; member of the American Medical Association; at one time on the faculty of the University of Mississippi School of Medicine, University; died June 3, aged 57.

**Daniel Henry Griffith,** Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1911; died June 2, aged 65.

**Charles Nicholas Guhman** ⊕ St. Louis; Washington University School of Medicine, St. Louis, 1903; served during World War I; died June 6, aged 74, of heart disease.

**Oliver Overstreet Hammonds** ⊕ Oklahoma City, Okla.; University Medical College of Kansas City, Mo., 1900; formerly commissioner of the state health department; served in the U. S. Public Health Service; died May 20, aged 68, of carcinoma.

**Raymond Harris** ⊕ Ocilla, Ga.; University of Georgia School of Medicine, Augusta, 1937; served during World War II; died in the University Hospital, Augusta, June 1, aged 36.

**Frank Hill Hedges** ⊕ Frederick, Md.; University of Maryland School of Medicine, Baltimore, 1898; on the staff of the Frederick Memorial Hospital; died May 22, aged 78.

**Joseph Edmund Hillis,** Pryor, Okla.; University of Tennessee Medical Department, Nashville, 1900; died in Whitaker Hospital June 2, aged 73.

**Leo George Hogan** ⊕ Chicago; Bennett Medical College, Chicago, 1914; served during World War I; died in St. Bernard's Hospital June 18, aged 58, of papillary carcinoma of the kidney.

**Hal Rexford Hoobler,** Oakland, Calif.; Medical Department of the University of California, San Francisco, 1921; specialist certified by the American Board of Pediatrics; member of the American Medical Association and the American Academy of Pediatrics; affiliated with the Highland-Alameda County Hospital and Children's Hospital of the East Bay; director of the California State School for Deaf and Blind in Berkeley; died June 20, aged 60, of heart disease.

**Paris Robert Hysinger,** Chattanooga, Tenn.; Chattanooga Medical College, 1910; member of the American Medical Association; died in Erlanger Hospital May 18, aged 74, of injuries received in an automobile accident.

**Joseph Leland Kalfus** ⊕ Los Angeles; College of Physicians and Surgeons, Los Angeles, 1920; fellow of the American College of Surgeons; served on the staff of Our Lady of Perpetual Help Hospital in Santa Maria, Calif.; died in May, aged 60.

**Ernest Kelley** ⊕ Omaha; John A. Creighton Medical College, Omaha, 1907; professor and head of the department of nervous and mental diseases at his alma mater; specialist certified by the American Board of Psychiatry and Neurology, Inc.; fellow of the American College of Physicians; member of the American Psychiatric Association; on the staffs of St. Joseph's, St. Catherine's, Lutheran and Doctors hospitals; died May 14, aged 65, of heart disease.

**William August Klingberg** ⊕ Hope, Kan.; Rush Medical College, Chicago, 1901; past president of the Golden Belt Medical Society; served during World War I; retired as a lieutenant colonel in the reserve corps of the Army in 1945; died suddenly, May 10, aged 74, of coronary occlusion.

**Irl Brown Krause** ⊕ Jefferson City, Mo.; St. Louis University School of Medicine, 1921; member of the American Public Health Association; past president of the Missouri Tuberculosis Association; served during World War I; died May 29, aged 55, of coronary thrombosis.

**Aron J. Lauer** ⊕ Whiting, Ind.; Bennett Medical College, Chicago, 1893; an Associate Fellow of the American Medical Association; past president of the Lake County Medical Society; formerly secretary of the city board of health and member of the library board; affiliated with St. Margaret and St. Catherine's hospitals in Hammond; died April 30, aged 78, of coronary occlusion.

**Joseph Charles Lee** ⊕ Indiana, Pa.; Western Reserve University School of Medicine, Cleveland, 1929; fellow of the American College of Surgeons; on the staff of the Indiana Hospital; died in the Cleveland Clinic Hospital April 8, aged 44, of carcinoma.

**Marvin Eugene Leusley,** Covin, Ala.; Washington University School of Medicine, St. Louis, 1901; died May 22, aged 75.

**Joseph Cook Lovett** ⊕ Camden, N. J.; Jefferson Medical College of Philadelphia, 1911; medical director of the Municipal Hospital for Contagious Diseases; affiliated with Cooper Hospital, where he died May 31, aged 63, of hypertension.

**John Gilbert McDougal** ⊕ New Lexington, Ohio; Medical College of Ohio, Cincinnati, 1882; member of draft boards during World Wars I and II; died in the Good Samaritan Hospital, Zanesville, April 27, aged 89, of coronary thrombosis.

**James John Malcolm,** Chetek, Wis.; Trinity Medical College, Toronto, Ontario, Canada, 1900; served during World War I; died in St. Cloud, Minn., June 2, aged 74.

**Robert Prosser Morrow,** West Point, Ga.; University of Alabama School of Medicine, 1911; member of the Medical Association of the State of Alabama and the American Medical Association; died in the Valley Hospital May 30, aged 68.

**Joseph Moss,** Kankakee, Ill.; Loyola University School of Medicine, Chicago, 1918; died May 3, aged 74, of carcinoma of the stomach.

**Edward Lord Mulford,** Ithaca, N. Y.; Yale University School of Medicine, New Haven, 1931; member of the American Medical Association; affiliated with Hermann M. Biggs Memorial Hospital, where he died May 13, aged 47, of heart failure.

**Clayton Merchant Payne** ⊕ Alice, Texas; University of Louisville (Ky.) Department of Medicine, 1908; served during World War I; died April 8, aged 75, of coronary occlusion.

**Lewis Waite Pease,** Weymouth, Mass.; Tufts College Medical School, Boston, 1902; member of the American Medical Association; died in the South Shore Hospital recently, aged 73, of cerebral hemorrhage.

**Franklin Aborn Perkins,** Boston; College of Physicians and Surgeons, Boston, 1911; member of the American Medical Association; affiliated with the Harley Hospital; died in June, aged 65.

**Nilo C. Pintado,** Miami, Fla.; Universidad de la Habana Facultad de Medicina y Farmacia, Cuba, 1908; member of the American Medical Association; died in Coral Gables, June 11, aged 64, of coronary occlusion and hypertension.

**Jack Irving Rabens** ⊕ Chicago; Rush Medical College, Chicago, 1929; clinical associate in medicine at the University of Illinois College of Medicine; on the staff of Mount Sinai Hospital; died June 19, aged 46, of acute coronary thrombosis.

**Charles Franklin Smith** ⊕ Topton, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1911; past president of the Berks County Medical Society; served on the school board; vice president and director of the National Bank of Topton; affiliated with the Allentown (Pa.) Hospital, where he died June 4, aged 61, of congestive heart failure.

**Benjamin F. Swezey,** Buffalo, Minn.; Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1903; member of the American Medical Association; served as Wright County coroner and Buffalo health officer; died in Eitel Hospital, Minneapolis, June 2, aged 75, of heart disease.

**Harry Knibb Tebbutt Jr.,** ⊕ Albany, N. Y.; Albany Medical College, 1916; associate professor of otolaryngology at his alma mater; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Laryngological, Rhinological and Otological Society; served in France during World War I; for many years associated with Albany Hospital, where he died June 8, aged 57.

**Molyneaux Lawrence Turner,** St. Petersburg, Fla.; Long Island College Hospital, Brooklyn, 1893; fellow of the American College of Physicians; veteran of the Spanish-American War; died in the Veterans Administration Hospital, Bay Pines, June 6, aged 79, of carcinoma of the throat.

# Foreign Letters

## BRAZIL

*(From Our Regular Correspondent)*

RIO DE JANEIRO, July 6, 1949.

### Clinical Study of Chagas' Disease

The Oswaldo Cruz Institute was established in 1944 at Bambuhy, state of Minas Gerais. This is a center for the study of American trypanosomiasis (Chagas' disease). Since then a clinicoepidemiologic survey of the population, which consists essentially of workers for the Rede Mineira Railroad and their families, has disclosed more than 600 patients with the disease; 103 had an acute form and 505 chronic. On the basis of this study, Dr. F. S. Laranja, Dr. Emmanuel Dias and Dr. Genard Nobrega, in charge of the Bambuhy center, have just published a valuable report on the clinical and therapeutic aspects of American trypanosomiasis, a disease which is gaining importance in the tropical and subtropical rural districts of the Americas.

The authors have made a revision of the clinical forms of the disease and suggest a new classification: (*a*) acute form and (*b*) chronic form: (1) chronic indeterminate form (potential heart disease) and (2) chronic cardiac form (chronic Chagas' heart disease). Nervous manifestations of the kind described as the chronic nervous form of schizotrypanosis have not been observed in the cases studied at Bambuhy. Clinical and experimental evidence supports the view that chronic Chagas' heart disease is a well established clinical entity. In the acute infection they stress that two kinds of edema may occur: local edema of the parasite's portal of entrance and generalized edema, the so-called "myxedema." According to their observations the generalized edema may be related to the presence of hypoproteinemia, while the local edema seems to be of inflammatory origin. The manifestations of acute Chagas' heart disease also are described. Gallop rhythm, enlargement of the cardiac shadow (in some cases due to pericardial effusion), prolongation of the P-R interval, primary T wave changes and ventricular premature contractions are the more important diagnostic signs of acute Chagas' heart disease. Right bundle branch block occurred in 3 fatal cases of acute Chagas' heart disease; in 1 of them a pronounced S-T displacement was also present. Death during the acute period of Chagas' disease is usually preceded by convulsions. The manifestations of the acute infection subside spontaneously and gradually in most cases; the disease then develops into the chronic stage and the patients become apparently cured, although still infected.

Patients with chronic infection and without evidences of heart involvement are considered potential patients with heart disease and classified in the group with the chronic indeterminate form of the disease. Infection remains in the organism, as a rule actively, and signs of heart involvement may develop later. Chronic Chagas' heart disease is usually a late manifestation of the infection. About 50 per cent of chronically infected patients present signs of heart involvement. The manifestations of chronic Chagas' heart disease depend on the severity of myocardial changes. Palpitations, dyspnea, convulsive-syncopal crisis (advanced auriculoventricular block), atypical precordial aches and pain in the upper part of the abdomen (liver congestion) are the commonest symptoms. Some cases do not present any symptoms; the heart is not enlarged, and the only evidence of myocardial damage is provided by the electrocardiogram (asymptomatic Chagas' heart disease). Irregularities of the cardiac rhythm, splitting of the second heart sound at the pulmonary area and gallop rhythm are common auscultatory findings. Heart enlargement involves all the cardiac chambers and is of variable degree. Patients with heart failure usually present pronounced heart enlargement. Signs of cardiac dilatation are predominant over those of cardiac hypertrophy. Signs of valvular deformity or structural changes of the large vessels are not found in this type of heart disease. Blood pressure is usually normal. Patients with heart failure may present reduced systolic pressure and small pulse pressure. Signs of functional valvular incompetence are common in patients with heart failure. Heart failure is usually of the right side or is bilateral, the isolated left side type of heart failure being rather uncommon. In the majority of instances the electrocardiogram reveals disturbances of impulse conduction and/or impulse formation. Ventricular premature contractions, right bundle branch block, auriculoventricular blocks of all degrees and atypical alterations of ventricular complexes are the most important electrocardiographic observations. Right bundle branch block is common in this type of heart disease and is of diagnostic value in endemic areas of schizotrypanosis.

Criteria for differential diagnosis with other types of chronic heart disease have been studied. Evolution of chronic Chagas' heart disease is variable, depending chiefly on the activity of the infection. Most patients die before 50 years of age. Prognosis depends in part on the degree of the enlargement of the heart, the degree of the reduction of the heart's functional capacity and the type of the existing arrythmia. Sudden death occurs commonly in this type of heart disease. Most of the deaths occur in heart failure.

An effective drug is not available for the treatment of Chagas' disease. Better results frequently are obtained with strophanthin than with digitalis in the treatment of heart failure of chronic Chagas' disease.

### Chagas' Disease and Blood Transfusion

Dr. J. Pellegrino reports for the first time the occurrence of Chagas' disease among persons serving as blood donors in Bello Horizonte, state of Minas Gerais. Three persons were found who exhibited strongly positive reactions to complement fixation tests (Schizotrypanum cruzi antigen). Formerly these persons lived in huts infested with Triatoma; 2 did not present signs or symptoms of Chagas' disease, but 1 showed heart trouble (right bundle branch block). The writer emphasizes the necessity for awareness of the dangerous possibility of the spread of Chagas' disease through blood transfusion. He suggests that the complement fixation test for S. cruzi be performed on all before they are admitted as blood donors in countries where the disease exists.

## ITALY

*(From Our Regular Correspondent)*

FLORENCE, June 15, 1949.

### Pneumonias in Asthenic Patients

Reports were presented before the medicosurgical association of the Romagna on pneumonia in asthenic persons and its treatment with antibiotics. Dr. Fontana of Ravenna demonstrated that the progress of anti-infectious therapy has contributed to progress in diagnosis through the criterion "ex adjuvantibus." This progress makes more necessary a rapid diagnostic orientation, thus making early intervention possible in certain diseases, by specific, highly effective treatment.

Pneumonia in old and debilitated persons is a typical example of such a morbid condition. In this group are patients with decompensated heart disease, diabetic patients and those who have had major surgical operations.

The clinical aspects of pneumonia in asthenic persons may include peculiarities which often make a diagnosis difficult; frequently the initial picture is one of grave cardiac insufficiency.

In the pathogenesis of the syndrome there are toxic and infectious factors which are fairly important but may often be only suspected; by cautious application of the criterion "ex adjuvantibus," it is highly probable that the patient's life may be saved.

The speaker reported the case of a patient with severe cardiac decompensation, who did not seem to present any infection but in whom definite improvement resulted from antibiotic treatment; previous cardiokinetic treatment had failed. The speaker emphasized the importance of an early "suspicion" in analogous cases; its practical importance is even superior to that of early (but erroneous) diagnosis. During the phase of early suspicion one can do nothing if one does not consider the "suspicion," but if one does one can proceed with other examinations and tests and also start life-saving treatment. Thus the fundamental problem of early diagnosis abides with early suspicion; the suspicion emanates only from careful medical examinations and may be assisted only by the good endowment of the physician.

Professor Giugni said that in a recent epidemic of influenza the antibiotics and the sulfonamide drugs were abused in cases in which there were no definite signs of bronchopulmonary localization, with the result that the local reserves of penicillin were depleted. He emphasized that the present wide distribution of these modern and effective therapeutic agents makes it too easy for one to forget the precious effect of digitalis, especially in cases of pneumonia in asthenic persons.

Professor Giugni said that one should suspect asthenic pneumonia especially in patients who suddenly suffer an attack of cardiac decompensation without previous history of cardiopathic changes. The "suspicion" may be transformed into nearly absolute certainty when a noteworthy improvement of the patient's condition results from treatment with sulfonamide drugs instituted on the base of such "suspicion" after the failure of cardiokinetic treatment.

### Optic-Chiasmal Arachnoiditis

In a meeting of the National Congress of the Italian Oto-Neuro-Ophthalmologic Society, Professor Di Marzio discussed optic-chiasmal arachnoiditis, an impairment of the region of the chiasm and of the emergence of the optic nerves. It is characterized (1) clinically by a complex of visual disturbances with campimetric and capillary changes and rapid diminution of vision and (2) anatomically by alterations of the optochiasmatic region, consisting in inflammatory lesions of the arachnoid which surrounds the chiasm and the first portion of the tract of the optic nerves.

The onset of symptoms is sudden, and the progressive diminution of vision is rapid. The visual field presents severe, early changes, generally bilateral and of irregular type. In the early stage the optic disk presents paripapillary edematous changes, with a slow tendency to atrophy in the second stage.

In addition to this type with acute onset, which occurs most frequently, one may observe the type with instantaneous blindness, which on first view does not show any changes of the *fundus oculi* and which may be confused with instantaneous blindness from other causes. In a case like this only lumbar puncture may provide precise orientation; no improvement may result in this type of blindness, while improvement results in blindness due to serous meningitis.

Arachnoiditis with a chronic course is associated with slow diminution of vision, which may be secondary to a central scotoma and reduction of the visual field or associated with horizontal hemianopia. Often these forms may be characterized by a rapid remission of the symptoms with partial spontaneous recovery, but after this improvement recurrences may be observed with a progressively severe course leading to blindness from optic atrophy.

In addition to early diagnosis, appropriate and timely treatment is important. In those forms in which the cause is known, causal treatment is advisable: arsphenamine and iodine given intravenously in syphilis; radiotherapy, vitamin $D_2$ and calcium given intravenously in tuberculosis, and operation on the sinus in cases of sinusitis.

When treatment of the cause may not be feasible, surgical intervention is advisable; it should be carried out early, since the benefit resulting from the operation is related to its timeliness. The speaker emphasized that the influence of surgical intervention on the course of the morbid condition is beneficial beyond doubt; in all his cases the progress of the process was arrested, and in the majority of the cases vision was improved definitely or even restored to normal.

### Plasmocytoma of Gamma Type

At the medicosurgical society of Verona, Dr. Colombo presented a patient with diffuse plasmocytoma of the gamma type demonstrated by the electrophoretic research carried out by Professor Wuhrmann of Zurich. The case presented difficulties in diagnosis; there were general signs of osteopathic changes, and a large swelling of one of the shoulders was observed which was considered to be an osteosarcoma. Explorative puncture immediately established the diagnosis. From the radiologic point of view, the case presented the peculiarities of typically myelomatous lesions (cranium and rips), close to the osteoporotic lesions (rickets), and a severe pseudosarcomatous aspect (humeral metaphysis). Serologically, strongly positive Takata, Ucko, Weltmann, Gaté-Papacostas and Wunderly (cadmium) reactions were observed.

The electrophoretic analysis carried out by Professor Wuhrmann demonstrated values as follows: albumin, 33.1 per cent; alpha globulin, 7.3 per cent; beta globulin, 5.1 per cent, and gamma globulin, 54.5 per cent (normal 14 to 18 per cent). Cytologic examination showed immature plasma cells and reticular plasmoblasts.

There was an unexpected and spontaneous remittance with progressive improvement in the course of three months of clinical follow-up without any specific treatment (irradiation, transfusions, antimony potassium tartrate, stilbene) which may be used today.

With respect to the possible mechanism of the improvement, the speaker alluded to the progressive allergic desensibilization (data recently elaborated by Zironi).

## PARIS

*(From Our Regular Correspondent)*

June 20, 1949.

### Urinary Radiomanometry

In attempts to treat stenosis of the neck of the ureter, Leger, Caillet, Libaude and Weber applied, for the first time, urinary radiomanometry to study the functioning of urinary excretion. This new method consists in injecting into the urinary tract a radiopaque liquid, under an adjustable pressure, which remains constant whatever the output may be. The apparatus for biliary manometry, perfected by Caroli, is perfectly suitable for this purpose. The pyeloureteral filling is supervised under a screen, and the pressure at which the passage of the liquid is obtained is noted. The alimentation tube for perfusion is then squeezed, and thus the pyeloureteral cavity communicates with the manometer only, in which the pressure falls without reverting to zero. This residual pressure responds to the permanent tonus of the smooth pyeloureteral musculature, but is not sufficient to insure the evacuation in the bladder of the pyeloureteral content. The difference between the initial pressure and the residual one expresses, according to the authors, the tonicity particularly of the area of the ureteral meatus. The authors express the hope that this new method will enable one to pursue the study of the painful functional syndrome and perhaps permit the discovery of some still unknown pathologic change at the ureterovesical junction.

### Congresses

The ninth meeting of the association for physiopathologic studies of the liver and nutrition will take place in Vichy Sept. 16-18, 1949. On the agenda will be "Therapy of Migraines of Hepatic Origin." Application should be made to the secretary's office: 32 Avenue du Président Wilson, Paris (16).

The seventh congress of French-speaking electroradiologist doctors will take place in Paris Oct. 11-15, 1949. In radiology there will be a report on radiodiagnosis, the radiologic study of the inferior third of the esophagus (Jutras, Levrier and Longtin); in radiotherapy, leukemias and their treatment (Betoulieres and Marques); in electrology, modern theories on the excitability and the conductibility of nerves (Professor Degrez). Registrations are in charge of Dr. Cherigie, Assistant General Secretary, 9 Rue Daru, Paris (8).

### Treatment of Syphilis with Penicillin

Herxheimer's reactions and relapses following penicillin therapy caused a discussion on the value of this treatment at a meeting of the Medical Society of Paris Hospitals on April 29. M. Bolgaert, G. Levy, F. Faure and J. Aladenise never observed these serious accidents, as they previously administered daily injections of 0.01 Gm. of mercuric cyanide for three days and then gave 15,000,000 units of penicillin (1,000,000 units spread over three days and the 14,000,000 remaining units given within fourteen days). The 56 cases they observed included 6 cases of primary, preserologic syphilis, 17 cases of primary, seropositive syphilis and 33 cases of secondary syphilis; negative serologic responses have been obtained, except in 1 case of secondary syphilis; these groups have been under observation for a maximum of 560, 660 and 676 days, respectively. The tolerance for this treatment was perfect. While not drawing premature conclusions, the authors have emphasized that these results are hopeful and superior to those obtained by others. Degos noted 30 per cent relapses within the first eighteen months following two successive courses of 10,000,000 units, separated by a ten day interval; he considers that penicillin does not offer a sufficient guarantee to justify its exclusive use. In mixed (and conjugated) treatment with penicillin, arsenic and bismuth, the author did not notice any synergic action, contrary to experimental results in animals. Degos is in favor of treatment with penicillin alone for three days, followed by a classic course of twenty injections three times per week of oil-soluble bismuth. Tzank, disappointed in penicillin therapy of syphilis, has stressed the excellent results obtained with arsenobismuth therapy.

## BELGIUM

*(From Our Regular Correspondent)*

July 8, 1949.

### Unstable Equilibrium of Athletes

At a meeting of the Medical Society for Physical Education and Sports, Dr. Hustin made a report on the Olympic games in London and pointed out a number of facts to be considered by those responsible for the medical supervision of sports. He pointed out, not only on the basis of interpretation but on absolutely objective observations, how trained athletes become so specialized biologically that they cannot tolerate the slightest deviation. Every change in food, habits, mode of life and sleep is likely to modify to a noticeable extent their possibilities of performance. Continued training creates a person so artificially and narrowly specialized that in his case we have the right to inquire whether we are not dangerously deviating from the maxim "mens sana in corpore sano."

He discussed the anemia of athletes, which is not widely known, and then proposed to the Belgian Medical Society of Physical Education and Sports a study of the marathon, with the aim of finding out whether it would not be advisable to omit it from the Olympic program or at least to modify it; the problem of the diet of athletes with regard to the type of sport practiced should also be investigated.

### Medical Activity in Luxemburg

For nearly a year the Society of Medical Sciences of Luxemburg has developed satisfactorily. Its scientific meetings and its bulletin are a valuable combination. An editorial in the first number says, "The publication of the bulletin of our Society is a duty which we owe to our country. We are proud of our independence and we maintain it. Don't you think that our independence should manifest itself not only in the political sphere but likewise in the scientific field?"

The work which appeared in a recent number relative to medical inspection in the slag mill in Dudelange deserves attention. Fréderic Hippert recalls that the dust of slag is not likely to produce tuberculosis; nevertheless, it is necessary to provide for regular medical examination of the workers, but the prophylactic measure of greatest importance consists in the effort to make the places of work more conducive to health.

# Correspondence

## IS THERE MERIT IN THE SO-CALLED "CEREBRAL PALSY" PROGRAM?

*To the Editor:*—Spastic paralysis and allied disorders of the central nervous system which must be considered in differential diagnosis have recently been widely publicized under the all-inclusive title of "cerebral palsy." An attempt is being made to establish expensive and elaborate training programs for the care of these patients in many of our crippled children's clinics. In some instances writers imply that such a program of muscle training and reeducation will afford continuous improvement in muscle control and function and will eliminate need for surgery to correct deformities even in selected cases. What can be expected from a program of this type?

My opinions are based on experience derived from study of a group of 2,096 consecutive cases seen prior to 1948 at the St. Louis Unit of the Shriners' Hospital for Crippled Children. These allied disorders of the central nervous system can be adequately classified under the four major headings shown in the table, which also shows the relative frequency with which each has been encountered. The classification into which each case falls is dependent on the clinical observations and manifestations, and these in turn are dependent on the portion of the central nervous system involved. The classification indicates that an all-inclusive term such as "cerebral palsy" is inadequate and nondescriptive. The use of a term of this type is comparable to the use of the term "rheumatism" in describing the various types of arthritis. Better would be a simple classification by which each case would be identified accurately according to the type of involvement.

The patients with a picture of spastic paralysis resulting from a pyramidal tract lesion comprise a large percentage of the total. This involvement may represent a simple uncomplicated spastic paralysis, but in many instances it is complicated by other clinical manifestations which are indicative of involvement of portions of the central nervous system other than the motor pathways. These manifestations are impaired sense of balance, impaired mentality, impaired speech, associated congenital athetosis or even associated epilepsy. These manifestations are of great clinical significance. The group with true spastic paralysis is the only one of the four in which surgical correction of deformities can be considered. Yet, for a patient to be suitable for surgery, there must be a satisfactory sense of balance and little or no associated athetosis. Speech and mentality should also be satisfactory if the child is eventually to become independent and self supporting. In this total series of 2,096 cases, of which 1,459 showed involvement of the pyramidal tract, only 546 patients could be considered suitable for surgical correction of the deformities which were present.

From a purely practical standpoint, all patients may be grouped under one of three headings: 1. Those in whom the involvement is mild, who do not require treatment and can be expected to take a normal place in society, remaining independent and self supporting. Approximately 25 per cent of the entire group can be so classified. 2. Those with moderate involvement and for whom much can be accomplished by reconstructive measures. This group also comprises about 25 per cent of the total number. 3. That large number of persons who show extensive involvement, from pyramidal tract lesions, extrapyramidal lesions, impaired mentality, cerebellar lesions or those with decided spasticity complicated by other associated conditions. These patients represent a type of involvement for which surgical reconstructive measures offer no hope of benefit, and little or nothing can be accomplished from any form of treatment. This large third group comprises about 50 per cent of the total number of cases.

Much has been written and said in recent years about the value of an elaborate training program for the management of these cases. In some instances elaborate institutions are being established for the care of the children to extend over a period of many years in order to furnish them with adequate supervised training and physical therapy. For the wealthy such a program is of course acceptable, not from the point of view of treatment and any benefit derived, but from the point of view of care which they can well afford. These institutions often attempt to establish as nearly as possible surroundings and facilities which are within the realm of the patient's physical abilities or, in brief, a country club for "spastics." Even some of the state crippled children's services have attempted to follow this pattern and establish facilities for the management of all cases of spastic paralysis or allied disorders of the central nervous system. Some spontaneous improvement invariably occurs in these patients and can be expected to continue through their adolescent years. This depends primarily on the normal development which takes place in the central nervous system. Much of the improvement which is credited to these specialized training programs may well be due to nothing more than the normal developmental processes which continue without regard to the treatment. The final picture in these patients as regards mentality, speech, sense of balance and the function of their involved extremities depends more on their normal developmental processes than on any combination of outside factors.

*Disorders of the Nervous System Observed at Shriners' Hospital, St. Louis*

| Type of Involvement | No. of Cases |
|---|---|
| Pyramidal tract lesions | 1,459 |
| Extrapyramidal lesions | 320 |
| Impaired mentality | 289 |
| True cerebellar lesions | 28 |
| Total | 2,096 |

The large third group, representing those with extreme involvement, offers a fertile field for the proponents of any program of training and muscle reeducation. This may be attributed partly to the fact that it is difficult or impossible to evaluate accurately the results obtained and still more difficult to know where credit for any improvement should be placed. The eternal cycle of changing therapeutic measures in those crippled children's problems which result from disease of the central nervous system is sufficient proof that we are clinicians, and orthopedists have more difficulty with these problems than with any other. We are impressionable and often influenced by suggestions which cannot be justified on the basis of the pathologic condition involved. The patient in this third group represents an extreme involvement of the central nervous system and in some instances an extreme developmental defect, which cannot be replaced or corrected under present medical accomplishments. Any program of muscle training and reeducation is merely tinkering with the peripheral, secondary manifestations and cannot be expected to alter the primary pathologic change. These patients may show some improvement in subsequent years, but this improvement will occur spontaneously from natural development.

Since so little can be accomplished by expensive and extensive training programs in the third group with extreme involvement, and since the first two groups do not need it, it seems unwise for any crippled children's organization to expend the vast sums of money which would be required to establish such a program. What is actually needed for this group of patients is the establishment of institutions where the everyday needs of the patient could be adequately met without any attempt at expensive training and rehabilitation. Our present institutions for the mentally incurable, representing principally the state asylums for the mentally disturbed, are not satisfactory for this type of patient and are so overcrowded that it is impossible to admit a patient even when the family consents. Institutions could be established which would give the care required by these patients without entailing a tremendous expense or large personnel. The patients themselves would be happier, since they would be in an environment which they would consider more normal with the type of involvement which they show and since they would be relieved of the strain resulting from their contact with the fast pace of everyday life. More than this, one of the greatest advantages resulting from adequate institutions of this type would be derived by the normal members of the family who remain at home. Any home with a child of this type seldom enjoys a normal home life. The patient often requires all of the time and care which the parents can give, frequently resulting in the neglect of the normal children who could hope to derive benefit from their guidance and counsel. It would seem wise therefore to discourage serious consideration of recent proposals calling for the establishment of elaborate and expensive training programs by the various state crippled children's services and other charity organizations. Efforts should be made instead to obtain establishment of institutions in which adequate everyday care could be given to patients who fall in the unfortunate third group.

H. R. McCarroll, M.D., St. Louis.

This letter was referred to Drs. Perlstein and Phelps, who reply:

*To the Editor:*—Some of the arguments set forth by Dr. McCarroll are logical, but would have more merit if his premises were as correct as his thinking. He states, for example, "In some instances writers imply that a program of muscle training and reeducation will afford continuous improvement in muscle control and function and will eliminate need for surgery to correct deformities even in selected cases: What can be expected of a program of this type?" The implication is, of course, that this quotation expresses the opinion of those who are most interested in furthering the "so-called cerebral palsy program." In actuality, however, nothing could be further from the truth.

Any program which limits itself to muscle training and reeducation or to surgical correction and ignores socialization, speech correction, education, occupational therapy and the correction of sensory, emotional and other defects is incomplete. Despite Dr. McCarroll's statement as quoted here, I do not believe it possible to find anyone experienced in the field of cerebral palsy who would say that surgery should never be performed in any case. I think that the opinion would be almost universal, however, that there has been too much surgical treatment in the past.

The extent of Dr. McCarroll's experience in cerebral palsy is evidenced by his statistics. These same statistics, however, indicate that his experience has been of a rather restricted nature. His incidence of cases with pyramidal tract lesions is over four times that of cases with extrapyramidal lesions, as would be expected in an orthopedic hospital where the surgical aspects of the problem receive the main emphasis. It is well recognized that deformities and muscle imbalances due to pyramidal tract lesions are more amenable to surgical correction than those due to extrapyramidal involvement. Similarly, convulsive seizures and defects in mentality are much more common with pyramidal tract lesions (with the exception of paraplegic cases) than with extrapyramidal involvement. However, in training centers or schools for the mentally educable cerebral palsied, at least 50 per cent of the children have extrapyramidal tract lesions, as they and the spastic paraplegic patients constitute the bulk of the educable cases.

Many of the children originally seen in screening neuropediatric clinics never get to orthopedic hospitals (1) because their physical involvement is so minimal that treatment is not indicated; (2) because many die or are institutionalized during the first few years of life, or (3) because many of the lesions are of the extrapyramidal type and not generally amenable to surgical correction.

The material, therefore, on which Dr. McCarroll bases his conclusions is not representative of the cerebral palsied children seen in a general pediatric or neuropediatric clinic.

The question arises as to whether the teaching of such persons is worth while in time, effort and money. It may be advantageous to teach even the patient who is severely handicapped mentally some degree of self help or locomotion, even though it may be necessary eventually to place him in an institution for the feebleminded. Not only does such a patient have a richer, more satisfying life, but the cost of his care is substantially reduced.

Although Dr. McCarroll decries the establishing of institutions which could be called "country clubs for spastics," he, himself, suggests that there is a need for custodial care institutions with as normal an environment as possible. I agree with both of his statements. Institutional care, in its simplest form, is expensive, nor is it desirable to place in custodial care any person who may be trained so that he may live satisfactorily outside an institution. The cost of rehabilitation of such a person and the cost to the family in terms of social and economic disability caused by having such a person at home must also be taken into consideration. Any service, however, which can to some appreciable degree rehabilitate such a handicapped person is worth considerable expense.

Dr. McCarroll points out that many children will improve without having any type of treatment. This is, of course, well known, and no honest doctor would fail to credit the natural developmental urges in children for their full share in rehabilitation. As a matter of fact, one should always take advantage of this phenomenon and therefore attempt to stimulate this inherent tendency to improve by an approach to the emotional as well as the physical disabilities that exist in the child.

The ineffectiveness of such service comes, first, from failing to take the complete point of view of the person as an individual and considering him only as one who has difficulties in speech or one who has only deformities of body or one who has only emotional or mental problems. As no single specialist can be qualified to treat all facets of the disease, a program must include a complete list of all the medical, psychologic and social services which are available in the community. To consider the surgical approach as the most important is just as fallacious as considering drug therapy the most important solution.

Second, one must not consider cerebral palsy as an isolated problem but as part of the whole problem of the handicapped child. The reason for the present emphasis on cerebral palsy is that this group represents the largest segment of forgotten or neglected handicapped children. The National Foundation for Infantile Paralysis has been able to supply funds for the other large groups of crippled persons. The National Society for Crippled Children, in its promotion of the cerebral palsy campaign, has stressed that its interest is providing service for the cerebral palsied as a part of the total program for the handicapped.

Third, the cerebral palsy program has been damaged and to a certain amount retarded by well meaning lay organizations which have attempted to set up programs without medical help. By the same token, it has been harmed by doctors who have specialties in a single field who have not sought the help of their fellow specialists in other fields as well as of social service workers and psychologists. A clarification of the problem is being sought by a group of doctors of many specialties who have banded together in the American Academy of Cerebral Palsy, where points of view on all aspects of the problem can be freely exchanged. It is the opinion of groups like this that a properly constructed and properly administered cerebral palsy program effectively gains for society more than it spends.

M. A. PERLSTEIN, M.D.
4743 N. Drake Ave., Chicago 25.

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*To the Editor:*—I question some of Dr. McCarroll's statements. For example, the statement, "Much of the improvement which is credited to these specialized training programs may well be due to nothing more than the normal developmental processes which continue without regard to the treatment" and the following sentence are both unfounded statements of his opinion. Those who have worked with these specialized institutions over a period of years develop a different opinion in comparing cases treated by this method with cases not so treated.

The Shriners' hospitals do not have long time care as is well known; therefore patients cannot be followed in such a situation long enough to determine what the effects would be.

The conclusions in his last paragraph are based on his previous statements, of which he has no actual proof. He states, "Since so little can be accomplished by expensive and extensive training programs . . . etc." I think the fact that many states are undertaking to set up training programs for these patients and that most of this has been the result of observation by many of us in itself would indicate the value of such programs.

The cerebral palsied children who used to be brought to me five or six years ago had an average age of 6 or 7 years. At this age, I found many deformities due to postural conditions and in walking, such as contractures of the knees, tight heel cords, scoliosis, wrist drop and contracted hands.

Now that cerebral palsy has become so much better recognized, my average new patient age is between 1 and 2 years. I have found that, in most cases, by appropriate apparatus and training, most of the deformities seen in these older children previously untreated can be entirely prevented. This, I think, is an important phase of the picture.

There are adults that I have seen, previously untreated, in whom the lack of locomotion or use of the arms is entirely due to the deformities, and these persons could be useful and self sufficient had the deformity element been prevented in their early childhood.

In any plan it is well to present both sides of the picture, and on this basis I think that we should give some consideration to Dr. McCarroll's statements. However, I feel certain that the value of such programs has been definitely established and that in many instances the expense of setting them up does not need to be as great as he points out.

Winthrop M. Phelps, M.D., Baltimore.

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## THE LEMPERT FENESTRATION OPERATION

*To the Editor:*—The editorial on the fenestration operation in The Journal of June 25 requires clarification on a few points.

In the discussion of the results reported by Shambaugh and Juers and Shambaugh the statement is made that their "estimate of prognosis has apparently been revised downward." This statement seems to be based on the 1946 report by these authors[1] of improvement in 92 per cent of cases in which audiometric measurements were made two years after operation, whereas in the 1947 and 1948 reports[2] two year successful results, with practical hearing to within 30 decibels loss for the speech frequencies, were obtained in 80 per cent of ideally selected cases.

These two reports of results are not comparable, since they referred to two different criteria of evaluation of results: the first referred to all patients operated on with respect to whether or not they showed a significant audiometric gain (of more than 10 decibels), and the second referred only to the ideally suitable cases with respect to the percentage of patients with practical hearing after two years. Actually a more recent report[2a] showed that 94 per cent of 415 patients tested two years or more after operation had audiometric improvement (of more than 10 decibels), so that the "estimate of prognosis" of these authors has not been revised downward.

There is as yet no universally accepted criteria for evaluation of the results of the fenestration operation. Both the percentage of patients who have a significant audiometric improvement and the percentage that reach a practical level of hearing are useful criteria.

The editorial further states, "Other authorities suggest that the 20 per cent difference in estimate of good prognosis (60 per cent by Lempert and 80 per cent by Shambaugh) probably does not relate to a real difference in operative results obtained or technics employed. . . ." That there is "no real difference in technics employed" is without foundation. The modified technic first described in 1946 by Shambaugh and Juers[3] includes certain original features, based on experimental studies, to prevent recession of the hearing improvement due to osteogenic closure of the fenestra. The most important of these features is the use of continuous irrigation and the operating microscope to create a fenestra immaculately free from any microscopic particle of bone dust. Two years later Lempert described his "bone-dust-free nov-ovalis technic."[4]

George E. Shambaugh Jr.
Arthur L. Juers
55 E. Washington St., Chicago.

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[1] Shambaugh, G. E.: The Fenestration Operation for Otosclerosis, J. A. M. A. **130**: 999-1006 (April 13) 1946.

[2] (*a*) Shambaugh, G. E.: The Fenestration Operation: An Evaluation of Its Present Status, Surg., Gynec., & Obst. **84**: 828-838 (April) 1947. (*b*) Shambaugh, G. E., and Juers, A. L.: Indications for and End Results of Fenestration Surgery, Ann. Otol., Rhin. & Laryng. **57**: 397 (June) 1948.

[3] Shambaugh, G. E., and Juers, A. L.: Surgical Treatment of Otosclerosis, Arch. Otolaryng. **43**: 549-567 (June) 1946.

[4] Lempert, J.: Bone-Dust-Free Lempert Fenestra Nov-Ovalis: New Revolutionary Development of Surgical Treatment of Clinical Otosclerosis, Arch. Otolaryng. **47**: 280-288 (March) 1948.

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# Bureau of Medical Economic Research

## MISUSE OF AMERICAN MEDICAL ASSOCIATION DATA

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Director, Bureau of Medical Economic Research
Chicago

*In the article that follows, the Director of the Bureau of Medical Economic Research denies the claims of certain prominent advocates of compulsory sickness insurance that the Bureau of Medical Economics in 1939 stated that families with incomes of less than $3,000 a year could not afford to pay the costs of a "serious illness." These advocates apparently misinterpret the chart on page 90 of the pamphlet "Factual Data on Medical Economics" published in 1939 and revised in 1940 by the Bureau of Medical Economics. Even if the chart were not misinterpreted, the claims of these advocates cannot be supported now. There has been a reduction in the percentage of families with an annual income of less than $4,800, the present equivalent in buying power of $3,000 a decade ago; also the current test for many persons is inability to prepay about 20 cents a day—the price of a package of cigarets, a bottle of beer or a gallon of gasoline—as contrasted with the ability to postpay in the 1930's, before the rapid development of voluntary health insurance in the 1940's. A statement on inability to pay that uses a family income level without reference to the age composition of the family is unscientific. The term "medical indigency" can be defined only at the local level with qualifications to meet local conditions.*—Ed.

Dr. Channing Frothingham, Chairman of the Committee for the Nation's Health, stated recently: "The AMA's own statistics show that 80 per cent of the population—all those with incomes under $5,000 a year—are not able to meet the expenses of serious illness out of their own resources."[1] Testifying before the Senate Committee on Education and Labor, Dr. Allan M. Butler, associate professor of pediatrics at the Harvard Medical School, said, "The American Medical Association agrees that patients whose family income is $3,000 per year cannot pay the costs of serious illness."[2] Seymour E. Harris, professor of economics, Harvard University, made the following statement before the Senate Subcommittee of the Committee on Labor and Public Welfare, "Actually in 1939 the AMA estimated that families with incomes under $3,000 could not afford a serious illness. This is the equivalent of $5,000 today and, therefore, the AMA estimate suggests help for 80 per cent of all families."[3] Time and time again, advocates of compulsory sickness insurance cite these figures as American Medical Association's statistics, but do not mention the publication in which they were found. So far as we have been able to determine, the statements attributing these figures to the American Medical Association stem from a cursory analysis of a chart and a few lines of text appearing on pages 90 and 91 of "Factual Data on Medical Economics," published in 1939 and revised in 1940 by the Bureau of Medical Economics of the American Medical Association. When asked to cite a source for his statement, Dr. Frothingham wrote (March 14, 1949) the

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*The publications of the Bureau of Medical Economics from 1931 to September 1946,* when the name was changed to the Bureau of Medical Economic Research and the present Director was appointed, were searched by research assistants on the Bureau staff. Likewise the proceedings of the House of Delegates and the articles and editorials in The Journal of the American Medical Association since 1930 were examined. Janice Oberman, Research Assistant, did most of this searching and assisted in other ways in the preparation of this article. This statement has been read and approved by Roscoe G. Leland, M.D., who was the Director of the Bureau of Medical Economics from its inception in 1931 until his retirement in 1944.

[1] AMA's Health Program Branded "Fancy Publicity," Chicago Daily Tribune, Feb. 21, 1949 (Associated Press dispatch).

[2] Hearings Before the Committee on Education and Labor, United States Senate, Seventy-Ninth Congress, Second Session on S. 1606, pt. 1, April 1946, p. 412.

[3] May 25, 1949, on behalf of Americans for Democratic Action; mimeographed.

following paragraph in which he partially qualified the statement in the Associated Press dispatch already noted:

> My belief is further strengthened by the interpretation by those in whom I have faith of the chart on page 90 of the American Medical Association's pamphlet to which you refer, "Factual Data on Medical Economics," 1939. (I have not the revised 1940 copy.) It appears that the American Medical Association's officers responsible for that chart believed that persons who in 1939 had incomes under $3,000 a year could not meet "major illness" expenses without "sometimes needing help." Today, with the change in money values, $3,000 must be translated into over $5,000.

On page 68 of *The Nation's Health* (A Report to the President by Oscar R. Ewing, Federal Security Administrator, September 1948) appears the following statement which actually uses two of the terms of the chart, namely, "major" and "chronic" illness:

> As long ago as 1939, the American Medical Asociation estimated that an income of $3,000 a year was not adequate to pay the costs of a major or chronic illness. Since then, the consumers' price index has risen approximately 75 per cent. A family would need take-home pay of more than $5,000 to have the same spending power that $3,000 gave in 1939. Nearly 80 per cent of our families earn less than $5,000 and consequently would have difficulty meeting the costs of a serious or prolonged illness.

### 1939 CHART MISINTERPRETED

*The chart does not support Dr. Frothingham's statement; nor* does it support the statements made by other advocates of compulsory sickness insurance. (The chart on page 90 [fig. 1] and the comment on the chart on page 91 [fig. 2] are reproduced herewith as they were printed originally except that rows are lettered A to D upward and columns 1 to 5 across.) The chart, as well as the comment, indicates clearly that the indigent (row A—no income) are a community responsibility; no mention is made of responsibility at the federal (or state) level. Families receiving less than $1,500 per year (which is the meaning of row B of the chart) can pay the cost of some of their minor illnesses (column 1) and some of their major illnesses (column 2) but must have public aid for chronic illnesses (column 3), institutional care (column 4) and the prevention of illness (column 5). In fact, the chart indicates that for all income groups below $3,000 (rows A, B and C) institutional care (column 4) and prevention (column 5) can be provided by proper coordination of existing agencies; further reference to the two vertical columns for institutional care and prevention is therefore unnecessary. Members of the income group $1,500 to $3,000 (row C) are for the most part self sustaining for minor illnesses (column 1) and largely self sustaining for major illnesses (column 2). They, too, need help for chronic illnesses (column 3). Members of the income group of $3,000 or above (row D) are self sustaining.

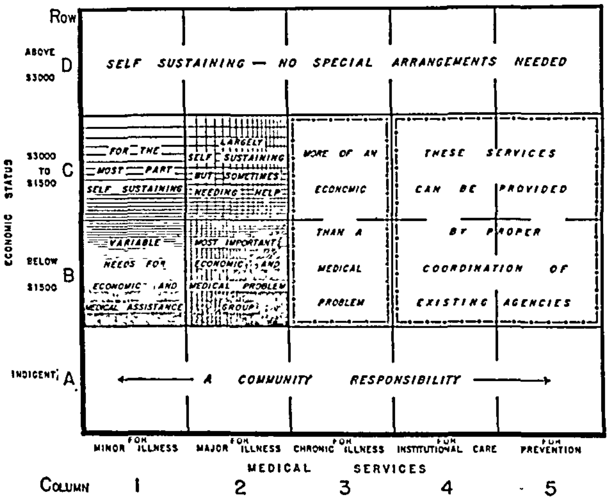
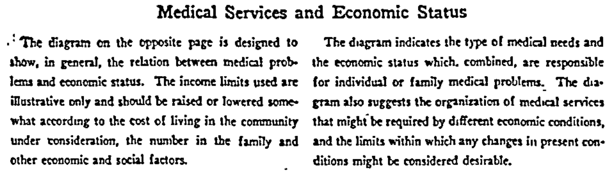

Row
ABOVE
D
$3000
SELF SUSTAINING — NO SPECIAL ARRANGEMENTS NEEDED
$3000
TO
C
$1500
FOR THE MOST PART SELF SUSTAINING
LARGELY SELF SUSTAINING BUT SOMETIMES NEEDING HELP
MORE OF AN ECONOMIC THAN A MEDICAL PROBLEM
THESE SERVICES CAN BE PROVIDED BY PROPER COORDINATION OF EXISTING AGENCIES
ECONOMIC STATUS
BELOW
B
$1500
VARIABLE NEEDS FOR ECONOMIC AND MEDICAL ASSISTANCE
MOST IMPORTANT ECONOMIC AND MEDICAL PROBLEM GROUP
INDIGENT A
A COMMUNITY RESPONSIBILITY
FOR MINOR ILLNESS
FOR MAJOR ILLNESS
FOR CHRONIC ILLNESS
FOR INSTITUTIONAL CARE
FOR PREVENTION
MEDICAL SERVICES
Column
1
2
3
4
5

Fig. 1.—Chart of medical services and economic status, reproduced from "Factual Data on Medical Economics," page 90.



Medical Services and Economic Status

The diagram on the opposite page is designed to show, in general, the relation between medical problems and economic status. The income limits used are illustrative only and should be raised or lowered somewhat according to the cost of living in the community under consideration, the number in the family and other economic and social factors.

The diagram indicates the type of medical needs and the economic status which, combined, are responsible for individual or family medical problems. The diagram also suggests the organization of medical services that might be required by different economic conditions, and the limits within which any changes in present conditions might be considered desirable.

Fig. 2.—Reproduction of the comment on the chart, from "Factual Data on Medical Economics," page 91.

Clearly, then, the Bureau publication "Factual Data on Medical Economics" does not use the term "serious illness," which is the term employed by these advocates; instead the terms used are minor, major and chronic illness. These advocates should have used the same words or made their substitutions clear. Since this publication is a compilation of charts, tables and brief text explanations, these advocates might have examined earlier Bureau publications for fuller discussions of the tables and charts.[4]

In 1941 another publication of the Bureau of Medical Economics reflected the rising cost of living in the statement, "The dividing line above which income may be considered sufficient to meet the cost of medical care is probably about $2,000" (Basic Principles of Medical Economics, American Medical Association, p. 51).

The frequency and total cost of minor, major and chronic illnesses should have been indicated on this checkerboard chart by different widths of the vertical bars. (Furthermore, row A should have been black instead of white.) The chart would then have clearly shown that minor illnesses, which are largely sustainable by all income groups, account for the greatest portion of all illnesses. Since prevention, as used in the chart (column 5), is primarily a matter for public health service agencies rather than the individual, it does not present an economic problem for individuals and its inclusion in this chart is additional evidence that the chart does not really define medical indigency.

Most references being made currently to these two pages by advocates of compulsory sickness insurance misinterpret this chart for one reason or another. The chart does not show that families with incomes below $3,000 cannot afford medical care; it indicates only that for chronic illnesses (as well as for institutional care and for prevention), some families of incomes below $3,000 present a problem for public aid and some families do not. The chart would not completely support their claims if they had used a figure of $1,500 ($2,500 now) instead of $3,000 ($5,000 now). In fact, this checkerboard chart does not provide any clearcut income level for definition of inability to pay the costs of a "serious" illness. When one considers the relative infrequency of chronic illnesses as compared with the high frequency of minor illnesses and the relative frequency of major illnesses, the deception practiced by those who misuse this chart is evident.

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[4] For example, it is stated in Organization of Medical Services, American Medical Association, Bureau of Medical Economics, 1937, pp. 7-8 (reprinted with additions, from the A. Med. A. Bull. **31**: 117-120 [May]; 125-131 [June]; 149-152 [Oct.] 1936): All of the upper income classes (above $3,000) may be assumed to constitute no important problem. They are already cared for under the traditional system of private practice, with existing facilities. The same is true for the great majority with incomes between $1,500 and $3,000 annually. Only cases of prolonged illnesses, or a series of serious illnesses in the same family, or the occurrence of such illnesses in connection with other unexpected expenditures should throw any members of this income division into the problem class.

Nearly all of the discussion of medical service plans is focused on those with incomes below $1,500. It must be remembered that this is a considerable class. It includes about 35 per cent of the nonfarming class and 72 per cent of the farmers.

Not all of these, however, constitute any special problem. A large percentage are able to pay for their medical care in the same way that they meet exceptional expenses in other lines.

Below these is the indigent class. This class is not fundamentally, and certainly not exclusively, a problem for the medical profession. The care of the indigent is a broad social problem. It is no more the problem of physicians than of any other citizens, except in the field of medical service. This is a large and, for the medical profession—especially during recent years—an extremely important field. It involves cooperation with public authorities and philanthropic organizations; and the function of the medical profession is principally to see that the quality of the medical service is maintained and that care of the indigent does not become an entering wedge for the introduction of undesirable methods of control and distribution of medical service.

Except for the indigent there is no important problem in the care of minor diseases. The economic difficulty arises at the point where major illnesses are combined with low incomes.

The problem of the care of the chronic ill is so largely economic as to be scarcely the main concern of the medical profession. The care of the chronic invalid depends on providing sufficient economic relief to provide support and medical care.

Neither do institutional cases demand any special new plans for their care. Here the function of the medical profession is to see that the care of the mentally diseased, the blind, crippled, or any others for whom institutional care is deemed necessary receive good medical service, free from political influence.

Preventive care runs across all income classes and many types of illness. Again, this is a field in which the main problem is the development and improvement of existing institutions. In this field public health, nursing and the private practice of medicine must combine their efforts. The problem is largely one of keeping clear the line of division and creating the most efficient forms of cooperation between each of these.

### MEDICAL COSTS HIGH, FOOD LOW

Any analysis of the question of medical indigency cannot be complete or meaningful without consideration of the composition, particularly with respect to age, of the families concerned. The needs of a family undergo constant change as the members of the family grow older. The typical young family, with the mother of child-bearing age, experiences the maximum medical needs. These needs decrease as the family grows older and rise rapidly again when the parents enter old age. The demands for food and clothing, however, follow a different pattern; they are usually at their maximum for parents in early middle age with grown children not yet married. Thus, when medical care expenses are at their maximum, food and clothing expenses tend to be at a minimum. Young fathers have not reached their maximum earning years; they are in the low income groups. The peak years of medical expense before old age, therefore, typically coincide with the years of low earnings for the young family. But these are also the years of low food and clothing expenses. These young families may have great medical expenses and low incomes, but they are more able to pay these expenses because their other living expenses will not reach their maximum until later in life. Obviously, then, a consideration of the income level alone cannot give enough information to determine medical indigency. Families in the same income group differ greatly in respect to their ability to afford medical care, and this difference arises out of the different age compositions of the families concerned. Income alone does not provide an adequate yardstick. The chart, as well as those who misuse the chart, overlook this changing relationship between medical and other family needs as the family grows older and its income rises until the breadwinner passes the earning peak later in life (at about age 45 to 55).

### FEWER LOW INCOME FAMILIES

Even if this chart had not been misinterpreted, its validity could not be the same today as at the time it was developed. The many changes that come about in time have undoubtedly altered its significance. One important change which would influence any interpretation of this chart is the change in the income distribution which occurred during the 1940's. According to the United States Bureau of Labor Statistics,[5] the Consumers' Price Index, which was 100 in 1935-1939, was 159.2 in 1947, the date of the latest available income distribution figures. As this price level has risen, the percentage of families in low income groups has declined. If the income figure of $3,000 is adjusted for the higher price level, an income of $4,800 ($4,776) in 1947 would be equivalent to the $3,000 income of 1935-1939 in purchasing power. That is, an income of $4,800 in 1947 would enable a family to purchase the same amount of goods and services it could have purchased in 1935-1939 with an income of $3,000. Dr. Frothingham and Professor Harris have rounded this figure to $5,000, which is admittedly more convenient than $4,800. The percentage of families with an income of less than $3,000 in 1935-1936 was 92.[6] In 1947, however, the percentage of families with incomes of less than $4,800 was approximately 79; under $5,000, the percentage was 81 and under $2,500, only 39.[7] It is evident, then, that the percentage of families in what was considered a low income group in the 1930's was considerably larger (92 per cent vs. 79 per cent) than the percentage in a comparable income group in 1947.

### POSTPAY THEN, PREPAY NOW

With the coming of Blue Cross and Blue Shield insurance plans and those developed by the insurance companies, the test of inability to pay has been utterly and completely changed. The emphasis today in the purchase of medical care is on prepayment, as contrasted with the concept of postpayment of former times. The test of the ability to pay for the type of medical care covered by Blue Cross and Blue Shield policies, especially in the case of major illness (column 2) is the ability of a family to prepay the premium for a combined Blue Cross-Blue Shield hospital and medical insurance policy for the entire family. The cost of this family policy is the price of a package of cigarets, a bottle of beer or a gallon of gasoline a day. In other words, any family that cannot prepay about 20 cents a day (the number of income earners per family averages more than 1⅓) may be considered medically indigent in 1949 with respect to the medical care provided under these policies. Before the development of voluntary insurance plans, the test of the ability to pay medical care bills ran up to several hundred dollars—the cost of postpayment in a lump sum or in installments. As long as the American people continue to choose to pay half again as much for alcoholic beverages and half again as much for recreation as they do for all types of medical care and choose to spend as much for jewelry and watches, more for personal care and twice as much for tobacco as they pay for their physicians, the advocates of socialized medicine in 1949 will be hard pressed to use the setting of the 1930's, even using $5,000 instead of $3,000 as the income level, for measuring or computing the proportion of the population which cannot prepay the cost of medical care. The ability to "prepay" and "postpay" are simply two different ideas of two different decades. Furthermore, the costs of the early part of chronic illness are met by voluntary insurance, and a long illness is one of the "rainy days" for which the American people have accumulated a large amount of savings.

### MEDICAL INDIGENCY DETERMINED LOCALLY

In general, it is very difficult, if not altogether impossible, to set any rigid income standard for determining who are medically indigent. Definitions of this term differ so greatly that it can scarcely be used without modifications to meet local conditions and changing times. In fact, few written definitions can be found in the literature on medical economics. Under the Maryland Medical Care Program which was established in 1945, the medically indigent are defined as follows:

> A person is medically indigent when he is unable in the place in which he resides, through his own resources, to provide himself and his dependents with proper medical, dental, nursing, hospital, pharmaceutical, and therapeutic appliance care without depriving himself or his dependents of necessary food, clothing, shelter, and similar necessities of life, as determined by the local authority charged with the duty of dispensing relief for the medically indigent.[8]

*Adopted and Recommended Annual Income Scales for Determining Medical Indigency*

| | Annual Income Scale | | | | |
|---|---|---|---|---|---|
| Number of Persons Supported by the Income | Adopted by the Council | Recommended by Committee of Council of Social Agencies | | | Department of Public Welfare Scale for Hospitalization |
| | | A | B | C | |
| 1 | $ 900 | $1,270 | $1,463 | $1,656 | $1,525 |
| 2 | 950 | 1,321 | 1,515 | 1,708 | 1,575 |
| 3 | 1,050 | 1,508 | 1,652 | 1,821 | 1,725 |
| 4 | 1,250 | 1,798 | 1,966 | 2,110 | 2,050 |
| 5 | 1,500 | 2,110 | 2,274 | 2,422 | 2,350 |
| 6 | 1,700 | 2,429 | 2,573 | 2,742 | 2,675 |

Source: The Maryland Medical Care Program: A Report by the Staff of the Subcommittee on Medical Care, Committee on Administrative Practice, New York, American Public Health Association, 1948, p. 37.

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[5] United States Bureau of Labor Statistics, Monthly Labor Rev., December 1948, p. 688.

[6] Statistical Abstract of the United States, United States Department of Commerce, 1940, p. 316.

[7] Computed from data in Current Population Reports—Consumer Income, Series P-60, no. 5, United States Department of Commerce, Feb. 7, 1949, p. 17.

[8] The Maryland Medical Care Program—A Report to the Subcommittee on Medical Care, American Public Health Association, New York, 1948, p. 38. Although no reference was cited, this definition was taken from the proceedings of a Special Session of the House of Delegates of the American Medical Association held in Chicago, Sept. 16-17, 1938.

Decisions as to what constitutes "necessary" food, clothing and shelter, and as to when a person would have to deprive himself of these items in order to purchase medical care certainly must differ with individual values and local conditions. It is evident that the developers of the Maryland Plan foresaw this difficulty and consequently left these decisions primarily to the discretion of the local authority.

An income scale to determine medical indigency was also adopted under the medical care program in Maryland, the only recent income scale I have located. Again the local authorities were authorized to adjust this income scale to meet local conditions. It is also interesting to note that the scale adopted was considerably lower than any of those recommended by the Council of Social Agencies and the department of Public Welfare in Maryland (table). Both the adopted and recommended scales are, nevertheless, still lower than the $3,000 level and far below the $5,000 level mentioned by Dr. Frothingham and Professor Harris, and these scales are based on recent cost of living data.

### SUMMARY

I stress the following points about the misuse of data published by the American Medical Association, particularly by the Bureau of Medical Economics:

1. Certain advocates of compulsory sickness insurance have misinterpreted the chart on page 90 of "Factual Data on Medical Economics."
2. Neither their statements nor the chart show the influence of the age composition of a family on its ability to afford medical care.
3. They have applied the chart to a period in which it is no longer meaningful.
    - (*a*) They have failed, therefore, to tell the story of the difference between the test of ability to prepay today and the test of ability to postpay in the 1930's.
    - (*b*) They have not taken into consideration the changing income distribution in the United States and its effects on the definition of medical indigency.
4. They are using a term, medical indigency, which at its best, is ambiguous and arbitrary and of no significance unless qualified in respect to local conditions and individual differences.

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various Centers. Sept. 12-14. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc. *Oral.* Denver, Oct. 16-20. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

American Board of Dermatology and Syphilology, Inc.: *Written.* Various Centers, Sept. 15. *Oral.* Cincinnati, Oct. 21-23. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Oct. 17. Asst. Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Part I.* Various Centers. Feb. 3. Final date for filing application is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: St. Louis, Oct. 15-19; Boston, April. Sec., Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II*, New York City, Feb. 9-10. Final date for filing application for Part II is Aug. 15. Address: Sec.-Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: Chicago, Oct. 7-8. Final date for filing application is Sept. 1. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: *Oral.* Cleveland, Sept. 16-18; New York City, Oct. 21-23; Chicago, Dec. 9-11. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Preventive Medicine and Public Health: *Parts I and II.* New York, Oct. 22-24. Final date for filing application is July 22. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Proctology: November. Sec., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Psychiatry and Neurology, Inc. *Special Examination.* Chicago, Oct. 24-25. December, New York City. Final date for filing applications is Sept. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Cincinnati, Sept. 28-Oct. 2. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, October 26. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written.* December. *Oral and Clinical.* Chicago, Feb. 11-15. Final date for receipt of case histories is Sept. 1, 1949. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18.

### BOARDS OF MEDICAL EXAMINERS

Alaska:* Juneau, Sept. 6. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Arkansas:* *Examination.* Little Rock, Nov. 3-4. Sec., Dr. Joe Verser, Harrisburg. *Eclectic.* Little Rock, Nov. 3. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

California: *Examination.* Los Angeles, Aug. 15-18. Sec., Dr. Frederick N. Scatena, 1020 N Street, Sacramento.

District of Columbia:* *Examination.* Washington, Nov. 14-15. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Georgia: *Examination.* Atlanta, Oct. 11-12. *Reciprocity.* Atlanta, Oct. 13. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Illinois: Chicago, Oct. 4-6. Supt. of Registration, Mr. Fred W. Ruegg, Capitol Bldg., Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Sept. 5, Oct. 3, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Minnesota:* Oct. 18-19. Sec., Dr. Julian F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

Montana: Helena, Oct. 3-5. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, Sept. 8-9. Sec., Dr. J. S. Wheeler, 107 State House, Concord.

New Jersey: Oct. 18-21. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico:* Santa Fe, Oct. 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

New York: *Examination.* New York, Albany, Syracuse and Buffalo, Oct. 4-7. Sec., Dr. Jacob L. Lochner Jr., 23 S. Pearl St., Albany 7.

North Carolina: *Endorsement.* Asheville, Oct. 17. Sec., Dr. Ivan Proctor, 226 Hillsboro Street, Raleigh.

Ohio: *Examination.* Columbus, December. *Endorsement.* Oct. 2. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Puerto Rico: San Juan, Sept. 6-10. Sec., Dr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

Tennessee: *Examination.* Memphis, Sept. 28-29. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis 3.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Wisconsin:* *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

Wyoming: Cheyenne, Oct. 3. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: Juneau, Aug. 28. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, Sept. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Arkansas: *Examination.* Little Rock, Oct. 4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

Colorado: *Examination.* Denver, Sept. 14-15. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

District of Columbia: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Michigan: *Examination.* Detroit and Ann Arbor, Oct. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing 15.

Minnesota: *Examination.* Minneapolis, Oct. 4-5. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

Nebraska: *Examination.* Omaha, Oct. 4-5. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln 9.

Oregon: Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Wisconsin: Milwaukee, Sept. 24 and Dec 3. Sec., Prof. W. H. Barber, Ripon College, Ripon.

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American J. Digestive Diseases, Fort Wayne, Ind.

**16**:79-120 (March) 1949

DDT Poisoning and the Elusive "Virus X": New Cause for Gastroenteritis. M. S. Biskind.—p. 79.
Surgical Considerations of Choledocholithiasis. J. A. Sterling.—p. 84.
Effect of Acetylsalicylic Acid on Gastric Mucosa of Shay Rat. J. Katz, R. L. Dryer, W. D. Paul and J I. Routh.—p. 88.
*Bleeding Per Ano.* E. T. Whitney.—p. 91.
Diabetes Mellitus. I. M. Rabinowitch.—p. 95.

### American Journal of Diseases of Children, Chicago

**77**:1-148 (Jan.) 1949

*Comparative Efficacy of Vitamin D Preparations in Prophylactic Treatment of premature infants. K. Glaser, A. H. Parmelee and W. S. Hoffman.—p. 1.
*Whooping Cough Treated with Pertussis Immune Serum (Human): Report on Controlled Series of 52 Patients Under One Year of Age. P. F. Lucchesi and A. C. LaBoccetta.—p. 15
Measles Encephalitis. E. Appelbaum, Vera B. Dolgopol and J. Dolgin.—p. 25.
Electrolyte Balance Studies on Premature Infants on Diet of Evaporated Milk. W. S. Hoffman, A. H. Parmelee and A. Grossman.—p. 49.
Developmental Opacities of Teeth in New England Community: Their Relation to Fluorine Toxicosis. V. O. Hurme.—p. 61.

**Vitamin D Preparations in Premature Infants.**—Glaser and associates studied the efficacy of four vitamin D preparations in preventing rickets and allowing normal growth in 166 premature infants for the first eight months of their lives. The preparations were (1) vitamin $D_2$ made by electron bombardment of ergosterol, (2) viosterol, which is vitamin $D_2$ made by ultraviolet irradiation of ergosterol, (3) crystalline vitamin $D_2$ and (4) "delsterol" (vitamin $D_3$), made by irradiation of 7-dehydrocholesterol. The dosages used were 100 units, 200 units, 400 units and 800 units daily. No clinical rickets were observed. Roentgenographic evidence of rickets occurred in 7 infants; in 2 others there was suspicious bowing of the extremities. Phosphatase levels above 15 Bodansky units per hundred cubic centimeters occurred in 29 instances, of which 23 were unaccompanied with evidence of rickets. It is believed that 20 units per hundred cubic centimeters represents a better normal upper limit for premature infants. With this limit, 12 instances of elevated phosphatase levels occurred, 10 of which were in the groups receiving 100 and 200 units. Serum calcium and phosphorus concentrations were almost always at high normal levels, even in the presence of roentgenographic evidence of rickets. Gain in weight and length was good in all 166 infants, regardless of the dosage or the type of vitamin D used. There appeared to be no difference in the efficacy of the vitamin D preparations in preventing rickets or in allowing growth. Though 100 units of vitamin D is a satisfactory prophylactic dose for most premature infants, 400 or 800 units daily allow a greater margin of safety in cases of illness or temporary neglect.

**Whooping Cough Treated with Immune Serum.**—According to Lucchesi and LaBoccetta it is generally recognized that whooping cough is severest and has the highest mortality rate in children under 1 year of age. For this reason, only children up to 12 months of age were included in this investigation. Only those for whom the diagnosis of whooping cough was confirmed by laboratory studies and by clinical evidence were studied. Patients were divided into two groups; each group included the alternate patients admitted without selection. Except for pertussis immune serum (human), the patients in group 1 were treated as those in group 2, the control group. Treatment consisted of sedation, aspiration and administration of sulfonamide drugs and/or penicillin for bacterial complications, oxygen and a mixture of 5 per cent carbon dioxide and 95 per cent oxygen. The patients who received serum showed a more regular decline in the rate of frequency of paroxysms when treated in the first week of disease than did the patients in the control group. The difference was not as noticeable when treatment was started in the second week of disease. In both instances, the difference was not apparent until after the second seven day period after hyperimmune serum had been given. The serum did not materially affect the rate of decline of the frequency of paroxysms in patients with bronchopneumonia as compared with controls. The temperature remained elevated longer in patients treated with serum than in the control patients.

### American Journal of Medical Sciences, Philadelphia

**217**:241-360 (March) 1949

Studies of Human Colon: I. Variations in Concentration of Lysozyme with Life Situation and Emotional State. W. J. Grace, P. H. Seton, S. Wolff and H. G. Wolff.—p. 241.
Treatment of Poliomyelitis Involving Respiratory System. H. E. West and A. G. Bower.—p. 252.
Effect of Therapeutic Doses of Aspirin on Acid-Base Balance of Blood in Normal Adults. H. R. Farber, M. J. Yiengst and N. W. Shock.—p. 256.
Study of Fixed Tissue Sections of Sternal Bone Marrow Obtained by Needle Aspiration: III. Metastatic Carcinoma in Sternal Bone Marrow. A. S. Weisberger and R. W. Heinle.—p. 263.
Blood Picture in Leprosy. Sadie Kiang and G. H. Choa.—p. 269.
Effect of Hesperidin Methyl Chalcone (Vitamin P) on Diabetic Retinopathy. F. B. Peck and M. Mann.—p. 277.
*Electrocardiogram in Myocardial Infarction: Its value as Diagnostic Aid in 130 Autopsied Cases. R. B. Failey Jr.—p. 283.
*Negative Results of Tocopherol Therapy in Cardiovascular Disease. C. K. Donegan, A. L. Messer, E. S. Orgain and J. M. Ruffin.—p. 294.
*Electrocardiographic Changes in Acute Gonococcal Arthritis and Myocarditis Simulating Acute Rheumatic Polyarthritis. E. Shapiro, M. L. Lipkis, J. Kahn and J. B. Heid.—p. 300.
Amyloid Heart Disease. J. Ballinger.—p. 308.
Pneumonia of Measles. L. Weinstein and W. Franklin.—p. 314.
Home Accidents as Community Health Problem. J. E. Gordon.—p. 325.
Immunization with Mixed Bacterial Antigens. D. S. Fleming.—p. 345.

**Electrocardiogram in Myocardial Infarction.**—The cases studied by Failey fall into 2 groups, the first comprising 100 patients in whom necropsy verified the diagnosis of myocardial infarction and the second comprising 30 patients in whom a clinical diagnosis could not be verified at necropsy. In many of these patients electrocardiographic studies were made subsequent to the development of the infarcts. Analysis of these records indicates that the use of 6 precordial leads as a routine procedure appears to be of value in the accurate diagnosis of anterior myocardial infarction and represents a considerable improvement over the technic employing only a single precordial lead. When the multiple lead technic is used, errors in diagnosis will be almost exclusively those of electrocardiographic interpretation as contrasted with errors stemming from insufficient data. The use of unipolar extremity leads appears to be of comparatively little value in the diagnosis of myocardial infarction.

**Negative Results of Tocopherol Therapy in Cardiovascular Disease.**—Donegan and his collaborators attempted by laboratory tests and clinical examinations to evaluate the effect of tocopherol therapy in selected types of cardiovascular disease. The 21 patients studied included 7 with hypertensive vascular disease without cardiac enlargement, 7 patients with hypertensive vascular disease and cardiac enlargement and 7 patients with classic and relatively stable angina pectoris. The patients were seen usually at monthly intervals over periods of five to twenty months. Tocopherol therapy was found to produce no appreciable benefit either subjectively or objectively, although the blood level of tocopherol could be significantly raised by the oral administration of the drug.

**Electrocardiographic Changes in Gonococcic Arthritis and Myocarditis.**—In the 4 cases presented by Shapiro and his co-workers, the migratory polyarthritis, fever, tachycardia, electrocardiographic alterations and increase in sedimentation rate simulated the criteria proposed by Jones for acute rheumatic polyarthritis. Rheumatic fever was ruled out by the presence of a septic joint, the failure of an initial attack of arthritis to respond to salicylates in adequate dosage and/or the arrest of the septic arthritis and fever by either a sulfonamide drug or penicillin. In the first case, the septic arthritis was probably gonorrheal in origin, although results of two complement fixation tests were negative. In the other 3 cases gonococcic arthritis was diagnosed on the basis of positive cervical cultures or positive reactions to complement fixation tests, the radiologic and clinical evidence of septic arthritis and the prompt arrest of the disease by treatment with an antibiotic. The authors conclude that electrocardiographic changes and polyarthritis can no longer be accepted as pathognomonic of acute rheumatic fever, because identical electrocardiographic alterations and polyarthritis can occur in acute gonococcic arthritis. The electrocardiopathy is apparently caused by toxic gonococcic myocarditis rather than a true inflammatory lesion.

## American Journal of Ophthalmology, Chicago

**32**:345-486 (March) 1949

Suggestions for Surgical Management of Strabismus. Fourth Sanford R. Gifford Memorial Lecture. L. T. Post.—p. 345.
Beta Irradiation of Eye. W. F. Hughes Jr. and C. E. Iliff.—p. 351.
Heredodegeneration of Macula. W. L. Berkley and F. R. Bussey.—p. 361.
Correlation of Cerebrovascular Resistance and Grade of Hypertensive Retinal Findings. I. H. Leopold, S. S. Kety, W. A. Jeffers and others.—p. 365.
Essential Progressive Atrophy of Iris. L. W. Chang and G. W. Ojers.—p. 369.
Investigation of Blood-Aqueous Barrier in Newborn: I. To Ascorbic Acid. V E. Kinsey and Blanche Jackson.—p. 374.
Trauma to Head with Particular Reference to Ocular Signs: II. Injuries Involving Hemispheres and Brain Stem; Miscellaneous Conditions; Diagnostic Principles; Treatment. A. B. King and F. B. Walsh.—p. 379.
Some Observations on Miotics. E. B. Dunphy.—p. 399.
Nasal Contraction of Visual Fields in Glaucoma. W. Arkin.—p. 407.
Congenital Cataracts: Survey of Various Types of Operation. C. H. Bagley.—p. 411.
Aphakia. A. Cowan.—p. 419.
Newer Concepts in Classification of Glaucomas. H. S. Sugar.—p. 425.
Sight Restoration in a School for the Blind. P. Dorman.—p. 433.

## American Journal of Psychiatry, New York

**105**:641-720 (March) 1949

Study of Selective Service Law Violators. M. J. Pescor.—p. 641.
Role of Rhythmic Patterns in Childhood. R. S. Lourie.—p. 653.
*Effect of Glutamic Acid on Mental and Physical Growth of Mongols. F. T. Zimmerman, Bessie B. Burgemeister and T. J. Putnam.—p. 661.
Mental Hospital Employees, Their Importance in Future Mental Hospital Betterment. C. A. Bonner.—p. 669.
Carotid Sinus in Neuropsychiatric Cases: Clinical, Electroencephalographic, and Electrocardiographic Studies. M. Greenblatt, M. Rinkel and H. C. Solomon.—p. 673.
Carbon-Dioxide Narcosis Therapy. J. A. Kindwall.—p. 682.
Use of Malononitrile in Treatment of Mental Illnesses: Preliminary Report. I. H. MacKinnon, P. H. Hoch, L. Cammer and H. B. Waelsch.—p. 686.
Current Trends in German Psychiatry. K. Schneider.—p. 689.
Note on Architecture of Psychiatric Ward. B. Merrill.—p. 691.
Facilitation and Inhibition as Factors in Behavioral Deviations. D. E. Cameron.—p. 693.
Psychosexual Factors in Paranoid Phenomena. Henriette R. Klein and W. A. Horwitz.—p. 697.

**Effect of Glutamic Acid in Mongolian Idiocy.**—Zimmerman and associates studied the effect of glutamic acid in 30 definite cases of mongolism and 30 control cases of nonmongoloid retardation. Glutamic acid accelerated both mental and physical growth in mongolian idiocy. Improvement in mental growth, while genuine, was not as great as in nonmongoloid retardation. Improvement in physical growth was striking over six months of treatment.

## American Journal of Public Health, New York

**39**:293-432 (March) 1949

Anniversary Program—150th Year U. S. Public Health Service: Past and Future of Public Health Service. L. A. Scheele.—p. 293.
Id.: Training of Health Man Power. L. J. Reed.—p. 303.
Id.: National Health Program—What the Public Expects, and How to Organize It. Agnes Meyer.—p. 308.
Improving the Quality of Medical Care: Training of Personnel. T. D. Dublin.—p. 314.
Id.: Group Medical Practice. D. A. Clark.—p. 321.
Id.: Regionalization of Hospitals. A. D. Kaiser.—p. 329.
Id.: Sound Principles of Administration. E. F. Daily.—p. 337.
Studies of Combined Action of Antibiotics and Sulfonamides. C. W. Price, W. A. Randall, H. Welch and Velma L. Chandler.—p. 340.
Importance of Antigenic Composition of Influenza Virus Vaccine in Protecting Against Natural Disease: Observations During Winter of 1947-1948. J. E. Salk and P. C. Suriano.—p. 345.
Public Health Rh Program on State-Wide Scale. C. I. Argall.—p. 356.
Laboratory Diagnosis of Tuberculosis. M. M. Cummings.—p. 361.
Industry's Responsibility for Worker Health. L. Price.—p. 367.

## American Review of Tuberculosis, New York

**59**:113-222 (Feb.) 1949

*Thoracoplasty in Treatment of Pulmonary Tuberculosis: Analysis of Results Five to Twenty-Six Years After Operation. T. J. Kinsella, E. S. Mariette, P. M. Matill and others.—p. 113.
Significant Electrocardiographic Changes Following Chest Surgery: Electrocardiographic Changes Currently Considered Indicative of Serious Heart Disease Occurring Postoperatively in Patients with Complete Absence of Clinical Manifestations of Heart Disease. S. M. Rauchwerger and F. A. Erskine.—p. 128.
*Streptomycin-Tuberculosis Research Project of the American Trudeau Society: Summary Report. H. M. Riggins and H. C. Hinshaw.—p. 140.
Constitutional Factors in Resistance to Infection. I. Effect of Estrogen and Chorionic Gonadotropin on Course of Tuberculosis in Highly Inbred Rabbits. M. B. Lurie, S. Abramson and M. J. Allison.—p. 168.
Id. II. Effect of Estrogen on Tuberculin Skin Sensitivity and on Allergy of Internal Tissues. M. B. Lurie, T. N. Harris, S. Abramson and J. M. Allison.—p. 186.
Id.: III. Mode of Action of Estrogen and Gonadotropin on Progress of Tuberculosis. M. B. Lurie, S. Abramson, A. G. Heppleston and J. M. Allison.—p. 198.

**Late Results of Thoracoplasty.**—Kinsella and his co-workers report 613 patients, 270 men and 343 women, with pulmonary tuberculosis who were subjected to extrapleural thoracoplasty at Glen Lake Sanatorium, Oak Terrace, Minn., during the period 1922-1943. Six hundred and nine of these patients had unilateral thoracoplasty carried out in 1,562 operations, while 4 had bilateral thoracoplasties performed in 12 operations, making a total of 1,574 operations for the entire series, an average of 2.6 operations per patient. Three hundred and eighty-three of the patients were operated on because of far advanced disease and 229 because of moderately advanced disease, and 1 patient had a complete thoracoplasty because of a minimal tuberculous lesion with pulmonary hemorrhage. Twenty-two of the 613 patients in the entire series died within fourteen days of the operation. A total of 34 patients died within eight weeks after operation, giving a mortality rate of 5.55 per cent based on the number of patients or 2.16 per cent based on the number of operations. The postoperative mortality rate (within eight weeks) since 1931 has been 3.0 per cent based on the number of patients and 1.16 per cent based on the number of operations. Shock, frequently of severe degree, was a very prominent feature in all of the earlier operations, but became a factor of much less importance in the latter portion of the series. Eleven of the deaths may justly be attributed to an extension of the tuberculosis. Four hundred and ten (66.8 per cent) of the entire series operated on were alive five to twenty-six years after operation and 169 (27.57 per cent) ultimately died of tuberculosis or its complications. Thirty-four patients died at various times up to eighteen years following operation from causes unrelated to tuberculosis. These survival figures clearly indicate the stability of the lesions in the patients operated on once the tuberculosis has been controlled by means of extrapleural thoracoplasty.

**Streptomycin-Tuberculosis Research Project.**—Riggins and Hinshaw report results of streptomycin therapy administered by a group of cooperating investigators in the American Trudeau Society to 332 patients, 132 men and 200 women, the majority between the ages of 20 and 39 years, who had completed streptomycin therapy and had been observed for at least ninety days after the beginning of treatment. Seventeen patients had minimal, 118 moderately advanced and 197 far advanced pulmonary tuberculosis. One hundred and seventy-seven of the 332 patients had a total of 204 known tuberculous complications, the largest number (125) with tracheobronchial and laryngeal tuberculosis. Of the 213 patients receiving daily dosages of the drug varying from 0.5 Gm. to 1.4 Gm., 148 (70 per cent) received 1.0 Gm. daily; of the 119 patients receiving daily dosages varying from 1.5 Gm. to 3.0 Gm., only 10 (8 per cent) received 3.0 Gm. daily. Clinical, roentgenologic and bacteriologic observations demonstrated that the degree of therapeutic efficacy of streptomycin is definitely related to the character of the pulmonary disease. Although improvement occurred much more frequently and was more pronounced in patients with predominantly acute disease than in those with predominantly chronic pulmonary disease, significant improvement was reported in a small percentage of patients with chronic disease. As the progression of chronic tuberculosis is fundamentally related to the occurrence of acute episodes, the great potentialities of the strategic use of short courses of streptomycin to combat such episodes should be stressed. The larger daily dosages of streptomycin appeared to bring about more frequent and more definite improvement than the smaller daily dosages, but the greater therapeutic effect was often minimized or nullified by the severer toxic manifestations incident to larger dosage. The availability of dihydrostreptomycin, which appears to be less neurotoxic than streptomycin, may aid in the solution of this problem. The occurrence of drug-fast organisms was found to be definitely related to duration of treatment. The failure to close cavities and convert sputum in a larger percentage of patients and the relapse of the disease with increasing frequency six to ten months after the beginning of treatment suggest limitations of antibacterial therapy for chronic tuberculosis and emphasize the absolute necessity of collapse therapy if lasting results are to be achieved.

## Archives of Dermatology and Syphilology, Chicago

59:1-126 (Jan.) 1949

*Prevention of Syphilis: Penicillin Calcium in Oil and White Wax, U. S. P., Bismuth Ethylcamphorate and Oxophenarsine Hydrochloride in Treatment, During Incubation Stage of Persons Exposed to Syphilis. L. J. Alexander and A. G. Schoch.—p. 1.
Sensitivity to Tuberculin of Persons with Acne: Importance of Age in Its Interpretation; Study of 1,136 Students. M. S. Heller and R. E. Wheeler.—p. 11.
Present Status of Quinacrine (Atabrine) Dermatitis: Report of 6 Cases. C. L. Schmitt.—p. 16.
Analysis of Basal Metabolic Rate and Blood Cholesterol Determinations. C. C. Tomlinson and O. J. Cameron.—p. 22.
Nodular Nonsuppurative Panniculitis (Weber-Christian Disease): Report of Case in Which Infiltrate of Polymorphonuclear Leukocytes Represented Earliest Lesion. W. F. Lever.—p. 31.
Contact Dermatitis: Practical Management and Identification Cause Without Patch Testing. R. L. Sutton Jr.—p. 36.
Intraepidermal Basal Cell Epithelioma. C. F. Sims and R. L. Parker. —p. 45.
Metastatic Transitional Cell Carcinoma of Penis Simulating Chancre. L. S. Markson, C. W. Stoops and J. Kanter.—p. 50.
Chronic Symmetric Impetigo. S. Crawford.—p. 55.
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Psoriasis and Adrenocortical Function: Preliminary Report on Possible Steroid Hormonal Etiologic Relationship. F. Reiss.—p. 78.
*Neurosyphilis: Penicillin and Malarial Fever Therapy Versus Penicillin and Vaccine (Typhoid) Fever Therapy. J. B. Watson.—p. 86.
Influence of Tetra-Chloro-Para-Benzoquinone on Human Fungous Infections. T. H. McGavack, D. Weiner, A. L. Cascio, and others. —p. 94.
Study of 120 Deaths Occurring in Dermatologic Service. P. LeVan and T. H. Sternberg.—p. 101.

**Prevention of Syphilis.**—Alexander and Schoch began in 1946 to treat persons known to have been in contact with patients who had infectious syphilis in an attempt (1) to prevent the development of the disease in these persons, (2) to reduce the spread of the disease to others and (3) to reduce the incidence of reinfection. Only persons who had had recent exposure to dark-field-positive primary or secondary syphilis and who were found to be clinically and serologically negative were included in the study. Confirmation of the exposure was ascertained by cross interrogation of the source patients and of the person suspected. The exposed persons were formed as impartially as possible into two groups. One group was treated with the abortive method; the other was kept under observation as an untreated (control) group. Each person in the treated group received an injection of 900,000 units of penicillin calcium in oil and white wax U. S. P. in one buttock, one injection of 3 cc. of bismuth ethyl-camphorate in oil in the other buttock and one of 0.05 to 0.06 Gm. of oxophenarsine hydrochloride intravenously. One hundred and forty-eight persons exposed to syphilis were given the abortive treatment. Six of these persons had early syphilis later, but 3 had definite reinfections and the other 3 were probably reinfected. Of 161 persons who had been in contact with syphilitic persons and who had not been given the abortive treatment (control group) early syphilis developed in 100, or 62.1 per cent. Thus almost two thirds of normal persons exposed to infectious early syphilis acquire early syphilis if untreated. Abortive treatment, as described, administered during the incubation stage affords almost 100 per cent protection. The authors conclude that repeated observation without treatment is not sufficient in patients who have had contact with syphilis.

**Treatment of Neurosyphilis.**—Watson reports 15 patients treated with typhoid fever vaccine and penicillin and 17 patients treated with malarial fever and penicillin. About four fifths of the patients in each group had dementia paralytica or the tabetic form of dementia paralytica, the remaining fifth having asymptomatic neurosyphilis, tabes dorsalis or meningovascular neurosyphilis. The author found that from the point of view of comfort to the patient and ease of administration, malarial fever therapy was far superior to vaccine fever therapy. In malarial fever therapy the percentage of patients who were improved was much greater, and the percentage who were worse was much less, than in vaccine fever therapy. There were fewer and less serious complications with therapeutic malaria than with vaccine fever therapy. There were no malarial relapses after the patient was treated with 3.2 Gm. of quinacrine hydrochloride over a six day period. In malarial fever therapy the laboratory tests found to be useful in judging the condition of the patient were the erythrocyte count and hemoglobin determination. A laboratory test which would aid in evaluating the condition of a patient receiving vaccine fever therapy was not found. Crystalline penicillin sodium G, 20,000,000 units given over a period of twenty-five days, seemed to be of minimal or no benefit in cases of dementia paralytica and the tabetic form of dementia paralytica. There were no deaths with either form of fever therapy.

## Archives of Internal Medicine, Chicago

82:217-320 (Sept.) 1948

*Streptomycin: Report of Its Clinical Effects in Forty-Four Patients Treated for Various Infections of Respiratory Tract. E. J. Pulaski and T. T. White.—p. 217.
*Bacteriologic and Immunologic Studies on Patients with Hemolytic Streptococcic Infections as Related to Rheumatic Fever. S. Rothbard, R. F. Watson, H. F. Swift and Armine T. Wilson.—p. 229.
Thymol Turbidity Test in Acute Infectious Diseases. K. Iversen and F. Raaschou.—p. 251.
*Adrenal Cortex and Arterial Hypertension. N. Sapeika.—p. 263.
Organisms Resistant to Penicillin Obtained from Patients. H. L. Hirsh, H. F. Dowling and J. A. Robinson.—p. 310.

**Streptomycin in Infections of the Respiratory Tract.**—Pulaski and White treated 44 patients, 42 adults between the ages of 17 and 51 and 2 children aged 6 and 4 years, respectively, who had nontuberculous infections of the respiratory tract, with streptomycin. Six patients with pneumonia due to Klebsiella pneumoniae (Friedländer's bacillus) were benefitted by courses of streptomycin treatment in which 0.25 to 0.4 Gm. of the drug was injected intramuscularly every three or four hours for periods of six to sixteen days. The degree of clearing of the lungs was proportionate to the duration of the infection. Two patients with pneumonia in which Hemophilus influenzae (Pfeifer's bacillus) was implicated responded rapidly to streptomycin. Results obtained in 3 cases of pulmonary tularemia confirmed the efficacy of this treatment in pleuropulmonary tularemia. In the management of coccic pneumonias, trial of streptomycin should be reserved for a final effort, to be made after penicillin or sulfonamide drugs have failed. In 2 children with pertussis and bronchopneumonia no dramatic alteration of the course of the disease attended streptomycin therapy. One patient treated with streptomycin and penicillin survived pneumonia with seven days of agranulocytosis. Streptomycin was of no value in the treatment of 1 patient with atypical pneumonia. One patient with blastomycosis, 1 with actinomycosis and 1 with moniliasis were treated with streptomycin. Sustained improvement and lasting remission were observed in the patient with blastomycosis. The patient with actinomycosis showed remission only while receiving treatment. No effect of the drug was noted in the patient with moniliasis. Streptomycin was of no value in the treatment of 6 patients with chronic bronchitis. Three patients with asthma accompanying chronic infection of the upper part of the respiratory tract, 2 patients with Hodgkin's disease, 7 patients with pulmonary sarcoidosis and 6 patients with other conditions of unknown cause were not influenced by streptomycin.

**Hemolytic Streptococcic Infections.**—Rothbard and his co-workers studied the antibody responses of 153 patients, 128 male and 25 female subjects, with 169 definite hemolytic streptococcic infections of the upper part of the respiratory tract. Fifty-four different infections were experienced by 39 patients known to have had one or more attacks of rheumatic fever previously, and 115 infections occurred among 114 nonrheumatic persons. Among the 39 known rheumatic persons there were 17 recurrences of rheumatic fever. Rheumatic fever developed in 21 of the 114 previously nonrheumatic persons. Group A streptococci caused 162 of these infections, group C caused 6 and group G caused 1. Rheumatic manifestations followed only those infections of the upper part of the respiratory tract which were due to group A hemolytic streptococci. Among these no special serologic type of Streptococcus was found associated either with rheumatic fever or with purulent complications of the original infections. None of the 7 infections due to streptococci of groups C and G led to rheumatic sequelae, although 5 of these occurred in patients who had previously had rheumatic fever. Determinations of antistreptolysin O and antifibrinolysin were done weekly for all patients; 71 patients were tested for type-specific bacteriostatic antibodies and precipitins against type-specific M, group-specific C and streptococcic nucleoprotein. Antistreptolysin O, antifibrinolysin, anti-M precipitins and type-specific bacteriostatic antibodies developed more frequently in rheumatic patients than in nonrheumatic ones. In the rheumatic group the maximal responses of antistreptolysin O and the type-specific bacteriostatic antibody were delayed about two weeks as compared to those in patients with purulent complications or who made uneventful recoveries. When the average weekly bacteriostatic antibody responses of the rheumatic and nonrheumatic groups were reviewed, the former had an average lower response than the latter during each of the second to the fifth week. At present no single pattern of antibody response can be used to diagnose the existence of rheumatic fever.

**Adrenal Cortex and Hypertension.**—Sapeika regards hypertensive vascular disease as nonrenal in origin. An attempt has been made to show that the adrenal cortex plays a major part in arterial hypertension, and much experimental and clinical data have been submitted. While there is much evidence for this point of view, final proof must still be awaited.

## Archives of Otolaryngology, Chicago

**49:1-128 (Jan.) 1949**

*Ménière's Symptom Complex: Its Relation to Chemistry; Etiologic Study. G. Selfridge.—p. 1.
Foreign Bodies of External Auditory Canal Causing Otitis Media. K. M. Simonton.—p. 16.
Lempert Endaural Subcortical Mastoidotympanectomy for Cure of Chronic Persistent Suppurative Otitis Media. J. Lempert.—p. 20.
Round Window Membrane of Cochlea: Experiments Demonstrating Its Physical Responses. H. G. Kobrak.—p. 36.
Effects of Allergy on Ethmoid Sinuses. H. P. Schenck.—p. 48.
Anesthesiology and Otolaryngology. S. Rochberg.—p. 53.
Effect of Differential Mobility of Windows of Cochlea on Mechanism of Hearing. J. A. Sullivan and W. E. Hodges.—p. 63.
*Local Streptomycin Therapy for Suppurative Otitis: Bacteriologic and Clinical Observations. H. W. Harris, L. Kilham and M. Finland.—p. 69.
Annoying Postoperative Problems in Otorhinologic Plastic Surgery. F. Turchik.—p. 78.
Tumors of Nose and Throat. G. B. New and E. L. Foss.—p. 86.

**Ménière's Symptom Complex.**—Selfridge says that the cause of Ménière's disease has been variously ascribed to disturbances of endocrine glands; infection; syphilis; low and high blood pressure; disturbances of the metabolism of salt, potassium, magnesium, iodine and calcium; deficiencies of certain vitamins (those responsible for spasm of blood vessels, as deficiency of thiamine, nicotinic acid or choline compounds); allergy; creatine-creatinine metabolism and the action of the nondecarboxylated fraction of histidine-histamine. Selfridge relates the disease to disturbances in nutrition and thus to body chemistry. He is convinced that deafness, including Ménière's disease, is not caused by any one thing but is related to all the factors involved in growth, i. e., endocrine products, electrolytes, amino acids and vitamins. He lists the principal treatments that have been advocated for Ménière's disease as follows: (1) surgical section of the labyrinthine branch of the eighth nerve; (2) treatment related to the metabolism of salt and water; (3) treatment related to the metabolism of potassium; (4) treatment related to the use of certain vitamins, especially thiamine and nicotinic acid, nicotinic acid alone, and a member of the group of choline compounds, and (5) treatment related to the use of histamine. A review of the recent literature gives the impression that the most favorable results have followed the use of several of the vitamins. Apparently surgical intervention has lost its popularity since the use of electrolytes, vitamins or endocrine substances began. Since vitamins and endocrine substances are so closely allied, as shown by their chemical formulas, it does not seem improbable that Ménière's disease is a chemical problem requiring further study and that it is related to nutritional and environmental factors.

**Local Streptomycin Therapy for Suppurative Otitis.**—Harris and his co-workers attempted to determine whether the development of resistance to streptomycin could be avoided by the local use of the antibiotic in high concentration. Bacteriologic and clinical observations were made on 27 ears with suppurative otitis receiving treatment with local instillations of streptomycin solutions. Clinical improvement occurred in about half these ears. Drainage stopped during the treatment and did not recur during a follow-up period of one to six months. Strains of organisms previously susceptible to streptomycin became resistant during the treatment in a large proportion of the cases, in spite of the fact that the concentration of the streptomycin instilled was at least twenty times as great as the minimum concentration required to inhibit the organisms isolated before treatment was started. The highly favorable results in some of the cases in which the condition had failed to improve with other forms of therapy suggest that local streptomycin therapy may be useful in suppurative otitis with organisms susceptible to streptomycin. Certain modifications which may enhance the efficacy of the therapy are suggested.

## Canadian J. of Research. Medical Sciences, Ottawa

**27:1-58 (Feb.) 1949**

Factors Relating to Quantitative Estimation of Low Levels of Diphtheria Antitoxin by Rabbit Skin Tests. L. Greenberg and J. Gibbard.—p. 1.
Diagnostic Use of Tetraethylammonium Chloride (Etamon) in Occlusive Arterial Disease of Extremities. J. Farr and J. Doupe.—p. 4.
Plasma Magnesium in Disorders of Thyroid Gland. J. B. R. Cosgrove and W. F. Perry.—p. 10.
Effect of Ill Health on Excretion of 17-Ketosteroids. W. F. Perry.—p. 14.
Preservation of Acetylcholine in Human Cerebrospinal Fluid: Simple Method for Clinical Use. D. B. Tower.—p. 20.
Relationship Between Serum Alkaline Phosphatase and Dietary Essential Amino Acids. J. Tuba, M. M. Cantor and A. G. Richards.—p. 25.
Preparation of Isinglass Solutions Suitable for Transfusion Purposes. H. D. Bett.—p. 31.
*Protection by Killed Vole Bacillus Vaccine Against Experimental Tuberculosis in Guinea Pigs. J. C. Paterson, D. W. Crombie and J. C. Coles.—p. 37.
Mucopolysaccharides of Human Skin. R. H. Pearce and E. M. Watson.—p. 43.

**Vole Bacillus Vaccine in Experimental Tuberculosis.**—A vaccine made from vole bacilli killed by ultraviolet rays has been shown by Paterson and his co-workers to confer a significant degree of protection against experimental tuberculosis in guinea pigs. The degree of protection was comparable to that obtained from BCG.

## Diseases of Chest, Chicago

**15:255-376 (March) 1949**

*Comparative Study of Sulfadiazine, Penicillin, and Penicillin Combined with Sulfadiazine in Treatment of Lobar Pneumonia. I. F. Volini, J. R. Hughes and J. R. Peffer.—p. 255.
Chronic Nontuberculous Pulmonary Infections and Their Sequelae. A. E. Greer.—p. 270.
Measurement of Function of Lungs. G. G. Ornstein.—p. 280.
Comments on Bacterial Resistance to Streptomycin. A. Shamaskin.—p. 303.
Extrapleural Pneumothorax. L. L. Friedman, L. O. Davenport and J. C. Bohorfoush.—p. 306.
Relationship of Pleural Fluid Sugar to Pulmonary Tuberculosis. S. M. Gelenger and R. F. Wiggers.—p. 325.
Tuberculosis in Children. S. L. Painter.—p. 329.
Pathologic Aspects of Atypical Pneumonias (Interstitial Pneumonitis). W. A. D. Anderson.—p. 337.
Routine Fluororoentgen Chest Examinations of Hospital Admissions from Viewpoint of Radiologist. A. Melamed and A. Fidler.—p. 346.
Combined Use of Streptomycin and Pneumoperitoneum in Treatment of Pulmonary Tuberculosis. S. H. Hoffman and G. A. Hyman.—p. 354.
Propagating Pulmonary Artery Thrombosis (Specific Syndrome). W. J. Bryson.—p. 366.

**Comparison of Penicillin and Sulfadiazine in Lobar Pneumonia.**—Volini and his associates report on a study at the Cook County Hospital in Chicago undertaken to compare the efficiency of orally and parenterally administered penicillin in pneumonia as contrasted with that of sulfadiazine and sulfadiazine combined with intramuscularly administered penicillin. Two hundred and thirty-nine patients were divided into 4 groups. Group I included 90 patients treated with sulfadiazine; group II, 54 patients treated with crystalline penicillin intramuscularly; group III, 48 patients treated with penicillin orally, and group IV, 47 patients treated with combined penicillin and sulfadiazine. The comparison demonstrates that penicillin is much superior to sulfadiazine in the treatment of pneumococcic pneumonia. In the group in which sulfadiazine was given in addition to penicillin, there was a delayed clinical response, a greater incidence of complications and a higher mortality rate. Thus the clinical use of sulfadiazine with penicillin indicates a possible antagonistic action in vivo rather than a synergistic effect. There is little justification for the combined administration of the sulfonamide drugs and penicillin in pneumonia. Penicillin alone will accomplish the desired goal if this is attainable. There are few patients with pneumonia who cannot be treated with penicillin; they may require treatment with sulfonamide drugs.

### Experimental Medicine and Surgery, Brooklyn

7:1-72 (Feb.) 1949. Partial Index

New Applications of Chest Lead Diagrams and Circumferential Leads in Clinical Cardiology. B. Kisch.—p. 1.
Three-Phase Effect of Nicotine on Isolated Auricle: Its Reproduction by Means of Other Autonomic Drugs. S. Holz.—p. 10.
Studies on Alcohol Soluble Fungistatic and Fungicidal Compounds: IV. Treatment of Dermatophytosis Pedis with 8-Hydroxyquinoline. K. A. Oster and M. J. Golden.—p. 37.
Antibody Responses to Antigens in Oil. T. Lewandowski and G. J. Martin.—p. 46.

### Journal of Allergy, St. Louis

20:87-158 (March) 1949

Reactions to Antipneumococcal Rabbit Serum. XI. Neutralization of Circulating Polysaccharide by Serial Small Increments of Specific Antiserum Without Producing Reversed Passive Anaphylaxis. XII. Neutralization of Polysaccharide Prevents Acute Anaphylaxis from Normally Shocking Doses of Antiserum. XIII. Reinjection of Excess of Polysaccharide Resensitizes Guinea Pigs to Normally Shocking Doses of Antiserum. O. Swineford Jr., D. T. Faulkner and Jean Foster.—p. 87.
Id. XIV. Two cases of Mild Reversed Passive Anaphylaxis. O. Swineford Jr.—p. 93.
Comparative Study of Action of Various Sympathomimetic Amine Aerosols in Counteracting Dyspnea and Bronchospasm Induced by Histamine and by Acetyl-Beta-Methylcholine. M. S. Segal, J. F. Beakey, E. Bresnick and L. Levinson.—p. 97.
Clinical and Experimental Studies with Orthoxine, in Treatment of Bronchial Asthma. J. J. Curry, J. E. Fuchs and S. E. Leard.—p. 104.
Inhalation of 1-(3′,4′-Dihydroxyphenyl)-2-Isopropylaminoethanol (Norisodrine Sulfate Dust). L. R. Krasno, M. I. Grossman and A. C. Ivy. —p. 111.
Collagen Disease: Its Relation to Hypersensitiveness. L. H. Criep. —p. 116.
*Determination of Specificity of Histoplasmin and Coccidioidin as Tested on 356 Aleuts of Pribilof Islands. R. L. Sexton, J. R. Ewan and R. C. Payne.—p. 133.
*Eosinophilic Pleural Effusion and Pericarditis with Effusion in Allergic Subject: (Report of Case Treated with Pyribenzamine). N. Zivitz and J. A. Oshlag.—p. 136.
Nail Dystrophy Due to Plastic Undercoat for Holding Nail Lacquers. A. G. Franks.—p. 144.

**Specificity of Histoplasmin and Coccidioidin.**—Sexton and his co-workers tested 356 natives inhabiting the Pribilof Islands in the Bering Sea, regarded as a branch of Eskimos who migrated from Alaska to the Pribilof Islands, with tuberculin, coccidioidin and histoplasmin. Eighteen white personnel who had for the most part inhabited the southwestern or Pacific Coast states or areas in which coccidioidomycosis prevails were used as controls. Severe reactions were noted in the natives after injection of the tuberculin solution. The death rate for tuberculosis in Alaska is probably the highest in the world. No native showed a reaction to coccidioidin, and only 1 native reacted to histoplasmin. Of the 18 white personnel, 3 reacted to coccidioidin and none to histoplasmin. This large series of tests indicates the consistency of negative reactions in persons who have not come in contact with the disease. The authors recognize the fact that histoplasmin must be tested further in patients known to have had or to have come in contact with the disease to establish the specificity in question.

**Eosinophilic Pleural Effusion.**—Zivitz and Oshlag report a case of pleurisy and pericarditis in a hypersensitive woman, aged 49, who had been treated for asthma with potassium iodide for five years before her admission to the hospital. The significant features were the onset with cardiac arrhythmia, pneumonitis followed by pleurisy with effusion, pericarditis with effusion, 80 per cent eosinophils in the pleural fluid, failure of reaction to penicillin and streptomycin and absence of viral causation. Recovery followed the administration of 200 to 300 mg. of tripelennamine hydrochloride (pyribenzamine®) in four doses daily for two weeks. It is not known whether the recovery was spontaneous or resulted from the use of this antihistamine drug. According to the authors this is the first attempt made with apparent success to utilize the antihistamine drugs in treatment of such a case. Even without positive pathologic observations or the reproduction of the clinical picture by a specific agent, this case illustrates the hyperergic causation of cardiovascular disease. In the absence of death with postmortem studies or in cases of localized arteritis involving organs not readily accessible for biopsy, histologic proof is impossible and reliance must be placed on clinical evaluation. Pyribenzamine® therapy did not control the allergic rhinitis and asthma, which reappeared within twenty-four hours after the patient's discharge from the hospital.

### Journal of Experimental Medicine, New York

89:269-368 (March) 1949

Induction of Metastasis of Frog Carcinoma by Increase of Environmental Temperature. B. Lucké and H. Schlumberger.—p. 269.
One-Step Growth Curves of Various Strains of Influenza A and B Viruses and Their Inhibition by Inactivated Virus of Homologous Type. W. Henle and Evelyn B. Rosenberg.—p. 279.
Observations on Pregnant Rat Injected with Nephrotoxic Rabbit Anti-Rat Placenta Serum and Desoxycorticosterone Acetate. Emily N. Loeb, Abbie I. Knowlton, H. C. Stoerk and Beatrice C. Seegal. —p. 287.
Quantitative Studies on Total Plasmin and Trypsin Inhibitor of Human Blood Serum: I. Methods for Titration of Total Plasmin and of Trypsin Inhibitor. E. W. Todd.—p. 295.
Id.: II. Variations in Blood Concentration of Total Plasmin and of Trypsin Inhibitor in Streptococcal Diseases with Special Reference to Rheumatic Fever. E. W. Todd.—p. 309.
Specific Antigens of Variants of Shigella Sonnei. E. G. Baker, W. F. Goebel and E. Perlman.—p. 325.
Dietary Effects on Anemia Plus Hypoproteinemia in Dogs: I. Some Proteins Further Production of Hemoglobin and Others Plasma Protein Production. F. S. Robscheit-Robbins and G. H. Whipple.—p. 339.
Id.: II. Findings with Milk Products, Wheat, and Peanut Flours as Compared with Liver. F. S. Robscheit-Robbins and G. H. Whipple. —p. 359.

### Journal of Nervous and Mental Disease, New York

109:95-200 (Feb.) 1949

Intensive Electroplexy. M. Valentine.—p. 95.
*Pathogenesis of Progressive Cephalothoracic Lipodystrophy (Barraquer's Disease). L. Barraquer Ferré.—p. 113.
Psychiatric and Social Implications of Contrasts Between Psychopathic Personality and Obsessive Compulsion Neurosis. J. J. Michaels and R. T. Porter.—p. 122.
Combined Treatment of Symptomatic Paresis with Penicillin and Fever Produced by Continuous Intravenous Typhoid Vaccine. V. P. Mahoney and S. Hammerman.—p. 133.
Convulsive Therapies: Review of 511 Cases at Pontiac State Hospital. P. A. Martin.—p. 142.
Wechsler-Bellevue Scale and Substitution Test as Aids in Neuropsychiatric Diagnosis. Louise R. Hewson.—p. 158.

**Cephalothoracic Lipodystrophy.**—According to Barraquer Ferré progressive cephalothoracic lipodystrophy, which was first described by Barraquer Roviralta in 1906, is characterized by loss of fat tissue of the face, arms and trunk, in contrast with the normal or pathologic accumulation of fat tissue in the lower half of the body, especially on the buttocks. Progressive lipodystrophy is found much more frequently in female than in male subjects. The 10 patients observed by him were all female. He is of the opinion that the condition is caused by a central diencephalic disturbance of fat regulation. The fact that among his cases cephalothoracic lipodystrophy occurred in three generations has strengthened his conviction that, in its idiopathic form, the disease is due to hypothalamic heredodegeneration. In addition to the idiopathic, there is a symptomatic form, which may be caused by various processes, i. e., nervous, hormonal, metabolic or encephalitic. In either form the hypothalamic lesion creates a release and subsequent hyperactivity of the cervicodorsal sympathetic ganglions. Wartenberg, in his study on progressive facial hemiatrophy, assumes that this disease is caused either by heredodegeneration or other pathologic processes in the highest trophic centers, with release of lower centers, and this view reinforces the author's own with regard to cephalothoracic lipodystrophy.

## Journal of Nutrition, Philadelphia

### 37:163-302 (Feb.) 1949. Partial Index

Protein Requirements of College Women on High Cereal Diets with Observations on Adequacy of Short Balance Periods. Mildred L. Bricker, Ruth F. Shively, Janice M. Smith and others.—p. 163.
New Vitamin A Reference Standard and Its Use in Evaluating Vitamin A Potency of Fish Oils. H. A. Ellenberger, N. B. Guerrant and M. E. Chilcote.—p. 185.
Comparison on Ascorbic Acid Content of Plasma and of Whole Blood as Criterial of Nutritional Status. Martha E. Hollinger and Rita Belle Attaya.—p. 203.
Pantothenic Acid and Conjugation Reactions in Vivo: I. Effect of Pantothenic Acid and Thiamine Deficiencies on Ability of Rat to Acetylate Sulfanilamide. M. E. Shils, H. M. Seligman and L. J. Goldwater.—p. 227.
Effect of Level of Dietary Calcium and Magnesium on Digestibility of Fatty Acids, Simple Triglycerides, and Some Natural and Hydrogenated Fats. Amber L. S. Cheng, Margaret G. Morehouse and H. J. Deuel Jr.—p. 237.
Importance of Bulk in Nutrition of Guinea Pig. A. N. Booth, C. A. Elvehjem and E. B. Hart.—p. 263.
Further Experiments on Relation of Fat to Economy of Food Utilization. A. Black, C. E. French and R. W. Swift.—p. 275.

## Journal of Urology, Baltimore

### 61:159-472 (Feb.) 1949. Partial Index

Resection of Twelfth Rib in Surgical Approach to Renal Fossa. F. A. Hughes.—p. 159.
Management of Acute Nonobstructive Renal Insufficiency. H. E. Leiter, I. G. Kroop, A. Fishman and A. Hyman.—p. 163.
Addisonian Crisis Precipitated by Nephrectomy. J. J. Kristan.—p. 178.
Sulfathiazole Anuria Cured by Means of Intravenous Procaine Treatment. N. P. Friis.—p. 184.
Unilateral Multiple Cysts of Kidney. C. P. Howze and J. H. Hill. —p. 187.
Branched Renal Calculi. J. T. Priestley and J. H. Dunn.—p. 194.
*Treatment of Ureteral Colic and Ureteral Calculus by Thoracolumbar Sympathetic Block: Preliminary Report. J. T. MacLean, J. J. Carroll and H. B. Graves.—p. 204.
Clinical Interpretation of Pyelo-Ureteral Dilatation of Pregnancy Based upon Experimental Studies. R. H. Jenkins and G. van Wagenen. —p. 217.
Allergy of Pelvic Urinary Tract in Female: Preliminary Report. L. Kindall and T. T. Nickels.—p. 222.
Normal and Abnormal Micturition: Study of Bladder Behavior by Means of Fluoroscope. S. R. Muellner and F. G. Fleischner.—p. 233.
Transurethral Resection for Neurogenic Vesical Dysfunction in Cases of Diabetic Neuropathy. J. L. Emmett, R. V. Daut and R. G. Sprague.—p. 244.
Bacteriological Study of Urine from Paraplegic Patients. S. E. Owen and E. P. Finch.—p. 258.
Report on Sexual Function in Paraplegics. H. S. Talbot.—p. 265.
Rupture of Urinary Bladder and Prostatic Urethra. H. T. Beacham. —p. 271.
Radical Perineal Prostatectomy for Cancer of Prostate: Analysis of 190 Cases. H. J. Jewett.—p. 277.
*Correlation of Clinical Experience and Heterologous Growth of Human Prostatic Cancer. C. L. Deming.—p. 281.
*Interstitial Cystitis: Report of 223 Cases (204 Women and 19 Men). J. R. Hand.—p. 291.

**Thoracolumbar Sympathetic Block in Ureteral Colic and Calculus.**—MacLean and his co-workers report 15 cases in which they resorted to this form of treatment. Their technic of blocking the sympathetic chain is that described by Labat with a few modifications of their own. Thirteen of the 15 patients, who had a colic at the time of the administration of the sympathetic block, obtained complete relief of the colicky pain within a few minutes after the local injection of 2 per cent procaine into the thoracolumbar sympathetic chain on the affected side. Of the 15 patients who had a stone, 8 passed the calculus spontaneously, and 1 was obtained with the stone basket. Of these, 4 had previously undergone unsuccessful instrumentation. In cases of ureteral calculus in which the calculus is considered to be of a sufficiently small size to pass down the ureter, it is thought that sympathetic block may facilitate the passage of the calculus. A sympathetic block does not commit one as to what the future treatment shall be in any given case. Many of the private patients have been treated on an ambulatory basis. The sympathetic block is performed at the hospital in the morning, and then the patient goes home.

**Correlation of Clinical Aspects and Heterologous Growth in Prostatic Cancer.**—Deming shows that heterologous transplants of human prostatic cancer into guinea pigs show the same characteristics as are seen clinically. Apparently testicular androgen is necessary to initiate the growth of prostatic cancer. Prostatic cancer shows great variation in response to the female hormone. Removal of testicular androgen cannot be depended on to control prostatic cancer. Prostatic cancer in the clinical or heterologous form becomes tolerant of estrogen after varying periods of growth. This suggests that the greatest effect from its use may be expected by greater hormonal imbalance applied early in the disease. The author feels that hormonal therapy must be more efficiently applied or it must be implemented by another agent which will completely control the growth of cancer of the human prostate. There is little evidence that the control of cancer of the prostate has been improved by hormonal therapy.

**Interstitial Cystitis.**—Hand stresses the considerable number of patients with interstitial cystitis who have had concurrent gallbladder disease, motor bowel disturbance, allergies of various kinds and multiple pelvic operations. This study was undertaken to determine the incidence of these and other disease processes associated with interstitial cystitis. He presents an analysis of 223 cases (204 women and 19 men). The three arbitrary grades for evaluation of the lesions were established on the basis of the degree of bladder involvement. Thus, 138 women and 15 men had minimal, or grade 1, lesions; 37 women and 4 men had active, or grade 2, lesions, and 29 women had far advanced, or grade 3, lesions. There was no difference in the character of the disease in the two sexes, except that in none of the men did the lesions reach the far advanced stage of grade 3. Most of the minimal lesions were found in the trigone-base area, whereas the greatest number of advanced lesions either involved the whole of the bladder or were confined to the dome. One patient with interstitial cystitis had a coexisting carcinoma of the bladder. Ten other cases are cited from the literature. There was a higher incidence of allergies, gallbladder disease, cystoceles, pelvic operations and some types of foci among the patients with interstitial cystitis than among those in a group selected for comparative study. Treatment of the patients with interstitial cystitis was both general and local. Because of the high incidence of castrates among the women with interstitial cystitis (36 as against 14 in the control group), there is need for adequate management of the endocrine factor. Two women had ureteral transplantations for relief of intractable pain. One of these women also had a cystectomy. Microsections of the extirpated bladder showed capillary dilatation together with thickening of the arterioles, dilatation of the venous structures and compression of the lymph channels. The most significant observation was nerve involvement, as evidenced by edema and extensive leukocytic infiltration about and within the nerve sheaths. This microscopic evidence of nerve tissue involvement as well as some clinical observations suggest that a neurogenic factor is responsible for the beginning and the continuation of interstitial cystitis.

## New England Journal of Medicine, Boston

### 240:319-356 (March 3) 1949

*Treatment of Hypertensive Cerebrovascular Disease by Splanchnicectomy. M. M. Peet and E. M. Isberg.—p. 319.
Public Financing of Medical Education, Research, Health and Medical Care. A. M. Butler.—p. 324.
Sarcoidosis in Identical Twins. J. F. Sherer Jr. and R. T. Kelley. —p. 328.
Vitamin E in Treatment of Angina Pectoris. I. S. Ravin and K. H. Katz.—p. 331.
Monorchism: Report of 2 Cases. G. K. Kawaichi, P. Cooper and H. F. O'Donnell.—p. 334.
Dermatology. J. G. Downing.—p. 336.
Malignant Lymphoma, Hodgkin's-Sarcoma Type of Stomach.—p. 344.
Neurofibrosarcoma of Stomach with Metastases to Liver and Perforation into Abdominal Cavity.—p. 347.

**Splanchnicectomy in Cerebrovascular Disease.** — Peet and Isberg say that during the ten years 1933 to 1943 more than 1,000 hypertensive patients were treated by splanchnicectomy at the University of Michigan Hospital. They cite 135 of these, who had previously sustained a cerebrovascular accident in which neurologic signs persisted for at least seventy-two hours. The five year survival rate for the series (in which male patients predominate) was 67.3 per cent, and the ten year survival rate was 40.5 per cent. The female patients had better survival rates than the male. Survival in hypertensive cerebrovascular disease is adversely influenced by the presence of retinal hemorrhages, high diastolic blood pressure and heart disease, coincidence of impaired renal function, advancing age of the patient and an interval of longer than two years between the stroke and the splanchnicectomy. Fourteen patients who had previous hypertensive cerebral accidents had normal blood pressure levels five to eleven years after operation. Approximately a third of the patients had a recurrence of cerebrovascular accident subsequent to neurosurgical treatment, and 50 per cent of the deaths were caused by such recurrences. The authors feel that as yet no definite statement can be made whether the surgical procedure of splanchnicectomy has beneficially altered the course and prolonged the lives of patients with hypertensive cerebrovascular disease. No control group is available for a proper comparison.

### New Jersey Medical Society Journal, Trenton

**46**:105-160 (March) 1949

Preventable Factors in Maternal Mortality. R. A. MacKenzie.—p. 106.
Non-Icteric Hepatitis: Report of Sporadically Occurring Cases Simulating Intestinal Grippe. H. E. Nussbaum and E. N. Comando.—p. 114.
Co-Existent Gastro-Intestinal Benign and Carcinomatosis Lesions. F. A. Marshall.—p. 117.
Carcinoma of Thyroid. E. V. Parsonnet.—p. 119.
Oral Estrogen Therapy in Menopausal Syndrome. A. J. Barbano.—p. 122.
Interrelation of Pediatrics and Orthodontia. W. M. Dunlap.—p. 124.
Estrogenic Treatment of Acne Vulgaris: Preliminary Report. I. Shapiro.—p. 128.
Therapeutic Test: Neglected Diagnostic Tool. S. Friedenberg.—p. 130.
Broncholithiasis: Report of Case Simulating Bronchogenic Malignancy. A. Welkind and H. A. Brodkin.—p. 133.

### Psychiatric Quarterly, Utica, N. Y.

**22**:587-796 (Oct.) 1948. **Partial Index**

Father Time: Analysis of Subjective Conceptions of Time. A. M. Meerloo.—p. 587.
Subcoma Insulin Therapy: Analysis of 300 Cases. P. J. Tomlinson.—p. 609.
Psychodrama Combined with Insulin in Treatment of Psychoses. J. L. Moreno and M. Schwartz.—p. 620.
Clinical Psychology in State Hospital. C. Landis and Elaine Kinder.—p. 641.
Psychologic Function of Proper Name in Reconstruction of Personality of Schizophrenic. L. Düss.—p. 646.
Neurosyphilis: Hospital Trends. I. I. Weiss.—p. 667.
Various Uses of Recorded Interview in Psychotherapy. H. Freed.—p. 685.
Psychodynamic Factors in Narcolepsy and Cataplexy. A. Coodley.—p. 696.
Folie à Deux: Case of Familial Psychosis. A. T. Kibzey.—p. 718.
Use of Histamine in Preparing Patients for Psychotherapy. E. O. Niver.—p. 729.

### Public Health Reports, Washington, D. C.

**64**:229-258 (Feb. 25) 1949

Murine Typhus Fever in Louisville, Kentucky. N. E. Good and E. Kotcher.—p. 229.
Twenty-Five Year Survival of Pasteurella Pestis Culture Without Transfer. E. Francis.—p. 238.

**64**:259-302 (March 4) 1949

Tuberculosis Studies in Muscogee County, Georgia: I. Community-Wide Tuberculosis Research. G. W. Comstock.—p. 259.
Id.: II. X-Ray Findings in Community-Wide Survey and Its Coverage as Determined by Population Census. M. H. Burke, H. C. Schenck and J. A. Thrash.—p. 263.
Comparison Between Histoplasmin and Blastomycin by Collodion Agglutination Technic. S. Saslaw and Charlotte C. Campbell.—p. 290.

**64**:303-330 (March 11) 1949

How National Mental Health Act Works. J. V. Lowry.—p. 303.
Prevalence of Antibiotic-Producing Coliform Organisms: Further Studies. S. P. Halbert and M. Gravatt.—p. 313.
Effect of Smallpox Vaccination on Outcome of Pregnancy. Marjorie T. Bellows, Mary E. Hyman and Katharine K. Merritt.—p. 319.

### South Dakota Journal of Medicine, Sioux Falls

**2**:1-38 (Jan.) 1949

Carcinoma of Thyroid Gland. A. S. Jackson.—p. 2.
Eradication of Tuberculosis—Your Responsibility. J. A. Myers.—p. 7.
Pre- and Postoperative Care of Patient with Malignancy. C. G. Johnston and H. M. Smathers.—p. 15.

**2**:39-74 (Feb.) 1949

Progress in Treatment of Carcinoma of Stomach and Esophagus. K. A. Meyer and D. D. Kozoll.—p. 39.
Eighteen Months' Experience with Pentothal-Curare Solutions. J. W. Baird.—p. 48.
Radiologic Treatment of Carcinoma of Uterine Cervix and Fundus. R. E. Fricke.—p. 52.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

### British Journal of Dermatology and Syphilis, London

**61**:41-76 (Feb.) 1949

Observations on Structure and Formation of Bullae.—I. G. H. Percival and P. W. Hannay.—p. 41.
Droplet Culture Method for Fungus Isolation, and Staining Method for Diagnosis of Epidermophytosis. J. Curry.—p. 54.
Pruritus Hiemalis: Review of Literature and Case Report with New Observations. P. Arnold.—p. 59.

### British Medical Journal, London

**1**:379-422 (March 5) 1949

John Hunter the Observer. H. S. Souttar.—p. 379.
Hematemesis with Special Reference to Chronic Peptic Ulcer. D. C. Lewin and S. Truelove.—p. 383.
Punch Prostatectomy. H. T. Cox.—p. 386.
Osteitis Fibrosa Disseminata. D. J. MacRae.—p. 389.
*Occupational Diseases of Lens and Retina. J. Minton.—p. 392.*
Frequency of Penicillin-Resistant Staphylococci. A. Voureka and W. H. Hughes.—p. 395.

### Lancet, London

**1**:333-380 (Feb. 26) 1949

Physiology, Science, and Medicine. W. H. Newton.—p. 333.
Megalocytic Anemias. J. F. Wilkinson.—p. 336.
Effect of Analgesics on Respiratory Response to Carbon Dioxide in Man. F. Prescott, Shila G. Ransom, R. H. Thorp and A. Wilson.—p. 340.
Urinary Schistosomiasis Treated with Miracil D. D. M. Blair, F. G. Loveridge, C. V. Meeser and W. F. Ross.—p. 344.
In-Vitro Test of Toxin-Producing Capacity of Corynebacterium Diphtheria. O. Ouchterlony.—p. 346.
Estimation of p-Aminosalicylic Acid in Blood and Urine. H. G. Dickenson and W. Kelly.—p. 349.

### Medical Journal of Australia, Sydney

**1**:113-152 (Jan. 29) 1949

Observations on Cardiac Output and Its Measurement, with Description of Modified Carbon Dioxide Method. M. J. Morrissey and A. Jean Palmer.—p. 113.
Surgical Treatment of Urinary Infections. A. Carrodus.—p. 118.
Observations on Effect of High Fat Diet in Alloxan Diabetic Rats. J. Bornstein and J. F. Nelson.—p. 121.
*Deafness Following Maternal Rubella. N. E. Murray.—p. 126.
Over-Emphasis on Psychiatric Symptoms. S. J. Minogue.—p. 130.
Problems Concerning Etiology of Rheumatic Fever. S. D. Rubbo.—p. 133.
*Hemagglutination Test for Diagnosis of Influenzal Meningitis. M. F. Warburton, E. V. Keogh and S. W. Williams.—p. 135.
Congenital Steatorrhea Due to Defect of Pancreas. Margaret Harper.—p. 137.

**Deafness Following Maternal Rubella.**—Murray discusses methods of estimating the hearing loss of preschool children whose deafness is due to maternal rubella. Reasons are given favoring the desirability of obtaining pure tone measurements. The author describes psychometric methods of obtaining the pure tone audiograms, initially by general visual and auditory cues which are later reduced to a single auditory pure tone response. Audiometric measurement was considered as giving the most reliable data with regard to the time and certainty of occurrence of maternal rubella in 105 out of approximately 350 cases. Measurements in these 105 cases (210 ears) show that the probability of hearing loss is greatest when maternal rubella occurs at about six weeks or three months of pregnancy, corresponding to the development of the cochlea and of the organ of Corti, respectively. Hearing loss is generally greatest in the low tones, decreasing on the average about 6 decibels per octave between 256 and 4,096 cycles. Deafness is moderate to severe but not total.

**Hemagglutination Test for Diagnosis of Influenzal Meningitis.**—Warburton and his co-workers describe a test for the diagnosis of influenzal meningitis which is based on the fact that the capsular polysaccharide of Hemophilus influenzae (type B) is present in the cerebrospinal fluid in sufficient concentration to inhibit agglutination by specific antiserum of erythrocytes previously sensitized with the polysaccharide. The authors describe the results of the application of this test in the laboratory diagnosis of influenzal meningitis.

### Tubercle, London

**30**:49-72 (March) 1949

Study of Tuberculosis Mortality in England and Wales. P. Stocks.—p. 50.
*Clinical Report of 3 Cases of Vitamin B Deficiency Occurring During Streptomycin Therapy.* J. Sumner.—p. 62.

## Acta Haematologica, Basel

**1**:217-292 (No. 4) 1948. **Partial Index**

Uncertainty in Prediction of Occurrence and Severity of Hemolytic Disease of Newborn from Antenatal Blood Test. Ruth van Olinda Ponder, E. Ponder and P. Levine.—p. 217.
Clinical and Experimental Investigations on Mode of Action of Urethane. S. Moeschlin.—p. 225.
*Effect of Urethane on Number of Leukocytes in Patients with Psoriasis. E. Gilg and A. Perdrup.—p. 248.
Urethane in Treatment of Leukemia (Review of Literature). F. Sherwood.—p. 253.

**Effect of Urethane on Leukocytes in Psoriasis.**—Gilg and Perdrup of Copenhagen say that in patients with psoriasis active mitosis is found in the stratum mucosum (epidermis) and it often decreases in response to roentgen therapy of the skin. These two facts made the authors try urethane (ethyl carbamate) in the treatment of 8 patients with psoriasis. It proved to have no effect, but the authors took the opportunity to study its effect on the leukocytes of these patients, all but 1 of whom had a normal blood picture. At the onset of the treatment there was a drop in the total number of leukocytes, especially in the cases in which the number had been rather high before the treatment was started. There were no significant changes in the granulocyte-lymphocyte ratio. The existing eosinophilia likewise was not influenced.

## Acta Medica Scandinavica, Stockholm

**132**:303-414 (Jan. 20) 1949. **Partial Index**

*Vitamin D Intoxication in Case of Parathyroprival Tetany: Report of Fatal Case with Autopsy Findings. H. Jelke.—p. 339.
Relation Between Dosage of Desiccated Thyroid and Its Effect on Oxygen Consumption in Healthy Individuals. H. Dahlström and T. Sjöstrand.—p. 353.
Intravenous Iron Therapy. G. Hemmeler.—p. 364.
*Menstrual Disorders in Pellagra. F. Mainzer.—p. 384.

**Vitamin D Intoxication in Case of Parathyroprival Tetany.**—Jelke reports the case of a woman, aged 54, who at the age of 35 had been operated on for goiter. She was well for the next twelve years, when tonic cramps developed in the extremities and cataract in both eyes. Hypocalcemia was observed fourteen years after the strumectomy. Treatment with A.T. 10 (dihydrotachysterol) was instituted. Three years later this drug was replaced with a synthetic vitamin $D_2$ preparation, of which 250,000 international units were taken daily for one year and three months. After this treatment had been continued for five months, hard nodes situated in the subcutaneous tissue began to appear on the arms. These corresponded to necrosis in the arterial walls and adjacent collagenic tissue. Subsequently there was increasing adynamia, dyspnea on exertion, swelling of the legs, emaciation, polydipsia and nocturia. There were signs of myocardial injury, hypercalcemia and azotemia. The nonprotein nitrogen level continued to rise steadily, at the same time as the amounts of urine diminished to the point of complete anuria. The patient died of renal insufficiency. The principal postmortem observations were renal injury with nephrosclerosis and extensive calcification of the fine interstitial arteries. The diagnosis was vitamin D intoxication with renal and vascular injuries.

**Menstrual Disorders in Pellagra.** — Mainzer cites 25 women with pellagra, 14 of whom were in the postmenopausal age and in 3 the menstrual history was unreliable, as pellagra had affected the memory. Of the remaining 8, 1 woman, with severe acute pellagra, with rapidly progressing anemia, high fever and fatal outcome, was the only patient with normal periods. The 7 other patients had menstrual disorders lasting from six months to eight years. Three of the 7 had menorrhagia, 1 had metrorrhagia and 3 had amenorrhea. Experimental and clinical observations have shown that, of the organs concerned with the sexual cycle, the function of the anterior pituitary, the adrenals and the liver is impaired by vitamin B deficiency. There is evidence strongly pointing to a pituitary origin of the amenorrhea in pellagra. Arguments are put forward supporting the view that the menorrhagia and metrorrhagia in pellagra are due to insufficient inactivation of estrogen resulting from impaired hepatic function. The adrenal and ovarian insufficiencies are assumed to be induced by a hypothetical direct influence of the deficiency state existing in pellagra. The author suggests that further studies on patients with pellagra should include biopsy of vaginal mucosa and endometrium and estimation of the urinary output of gonadotropic hormone, estrogen, 17-ketosteroids, creatinine, creatine and phosphorus.

## Finska Läkaresällskapets Handlingar, Helsingfors

**91**:1-130 (No. 1) 1948

Medical Viewpoints on Pathogenesis, Symptomatology and Treatment of Gallstone Disease. E. Adlercreutz.—p. 13.
Guidance in Modern Treatment with Vitamins. C. E. Nylund.—p. 28.
*Mercuric Chloride Titration of Blood Serum Especially in Diseases of Liver. R. Gordin.—p. 40.
*Hemolysis and Effect of Hemolysins in Vivo. C. Wasastjerna.—p. 48.
*Treatment of Diseases of Eye with Ultrashort Wave. Barbro Björkenheim.—p. 58.
Malignant Arrhenoblastoma. T. Brunila.—p. 66.

**Mercuric Chloride Titration of Blood Serum Especially in Diseases of Liver.**—On the basis of 221 mercuric chloride titration tests in 107 patients and of earlier investigations, Gordin concludes that this reaction is fully as reliable as the Takata reaction, with the advantage that the results are expressed numerically. The test is quickly and easily carried out. Mercuric chloride titration is primarily applicable in diseases of the liver but gives positive results also in other infections with changes in the serum proteins such as appear in disorders of the liver.

**Hemolysis and Effect of Hemolysins in Vivo.**—Wasastjerna asserts that in diseases with increased hemolysis the cause of the hemolysis may be a defect in the thrombocytes or hemolysis may depend on the presence in the blood of a substance which in some way destroys red blood corpuscles. Lysolecithin, a substance with hemolytic action, has been demonstrated in normal blood (Fahraeus). The experimental hemolysis in vivo reported by the author appears to him to be due to action of the organism on blood corpuscles which have been sensitized by small amounts of hemolysin. The spherocytosis is proportional to the hemolysis, not to the hemolysin doses, and far more pronounced in vivo than in vitro. The changes in form are also ascribed to the influence of the organism on sensitized red blood corpuscles. In this action of the organism the spleen plays an important but not dominating part. Hemolysis was more pronounced in splenectomized animals than in vitro.

**Treatment of Diseases of Eye with Ultrashort Waves.**—Björkenheim says that in 224 cases of diseases of the eye treated in the Eye Clinic of Helsingfors University from 1938 to 1946 the Siemens ultratherm apparatus was used in series of ten sessions, for ten minutes the first three times, fifteen minutes the next three times and twenty minutes the last four times, usually every other day, with wavelengths of 5 to 8 microns. The best results were attained in superficial corneal affections, iritis, postoperative iridocyclitis and neuritis. In some cases of ulcus serpens corneae, iritis, episcleritis and choroiditis, where perhaps the disease as such was not influenced, the pain disappeared. No injurious effect of the ultrashort wave was observed.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

**93**:313-388 (Jan. 29) 1949. **Partial Index**

*Prescription of Rest in Bed in Infectious Diseases. J. C. de Wit. —p. 319.
Lymphatic Leukemia and Cancer. H. Deenstra, M. C. Verloop and A. de Minjer.—p. 326.

**Rest in Bed and Early Rising in Infectious Diseases.**—De Wit discusses the advisability of prescribing rest in bed for patients with internal disorders, particularly for those with febrile diseases. He investigated the incidence of thrombosis and embolism in 1,200 patients, including 300 each in four different age groups. He admits that these groups are too small to arrive at definite conclusions, but he found that in the group of patients over 60 years old, there is a high incidence of thrombosis and of lobar pneumonia and that these and other complications, such as disturbances in bowel function and in retention of urine, are reduced when rest in bed is not continued for prolonged periods. The psychic factor is important in that patients who are allowed to get up earlier usually feel better. The author allows the patient to get up frequently on the second day of an acute infectious disorder, but usually he wait until the temperature has decreased to 39 C. (102.2 F.).

allows the patient to sit up twice a day for fifteen minutes in a comfortable chair, and he advises against the use of the bed pan. On later days he lengthens the periods of sitting up. He compares a group of 1,200 patients treated in this way with the aforementioned group of 1,200. He found that early mobilization reduces considerably the number of thromboses as well as the total duration of the disease, while no disagreeable complications were observed. Early mobilization did not influence the course of the fever. The author advises closer study of the influence of early mobilization in diverse internal anomalies.

## Nordisk Medicin, Stockholm

### 41:199-246 (Feb. 4) 1949

*Hormone-Producing Ovarian Tumors: Review. H. L. Kottmeier.—p. 199.
Prognosis in Acute Nephritis. J. Øster.—p. 204.
Treatment of Lesions in Brachial Plexus. G. af Björkesten.—p. 211.
*Somatic Investigations in Schizophrenics: Schizophrenia and Anorexia Nervosa. O. Lingjaerde.—p. 215.
Outcome of Routine Gynecologic Investigations in Surgical Department with Special Reference to Early Diagnosis of Cancer. W. Permin.—p. 219.
Roentgen Treatment of Hidradenitis Axillaris. N. Lauge-Hansen and S. Lyndrup.—p. 220.
Hypothalamic Lesion with Paroxysmal Crises. G. Wretmark.—p. 227.

**Hormone-Producing Ovarian Tumors: Review.**—These ovarian tumors are classified as (1) tumors causing feminine characteristics, (2) virilizing tumors and (3) other tumors with endocrine symptoms. Femininizing ovarian tumors, Kottmeier says, are granulosa cell and theca cell tumors. Granulosa cell tumors make up 4 to 9 per cent of all ovarian tumors, are usually unilateral, vary in size and occur at all ages. Before puberty they cause pubertas praecox, in the menopause, symptoms suggesting reactivation of ovarian function. The structure varies in different parts of the tumor; histologically folliculoid, cylindrotrabecular and fibrosarcomatous types appear. The tumors are often benign but may be malignant. According to present knowledge no correlation exists between histologic structure and malignity or between rapidity of growth and degree of malignity, but the sarcomatous form seems more often to be malignant. Not all granulosa cell tumors are hormone producing. Treatment is surgical; radiotherapy is indicated in cases incompletely operated on, or inoperable or with metastases. Theca cell tumors, unilateral and most frequent in the menopause, resemble granulosa cell tumors in symptoms and treatment. The first symptoms of virilizing ovarian tumors (arrhenoblastomas, adrenal rest tumors and luteinomas) are generally of defemininizing kind and followed by masculine symptoms. The tumors may be small and escape notice. With signs of virilizing ovarian tumor exploratory laparotomy is called for; if macroscopic changes are absent the adrenal region should be palpated. Arrhenoblastomas are usually unilateral, vary in size, most often occur between the ages of 20 and 40 and are histologically of highly differentiated tubular adenomatous type, solid atypical undifferentiated type or of a transition type between these forms. The more undifferentiated the tumor, the more pronounced the virile symptoms. Arrhenoblastomas are as a rule benign; cases of malignant growths have been reported. Treatment is like that of granulosa cell tumors. Tumors with thyroid tissue (struma ovarii) and the so-called gonocytomas constitute the third group.

**Somatic Investigations in Schizophrenics: Schizophrenia and Anorexia Nervosa.**—Lingjaerde says that the picture in the active phase of schizophrenia resembles that of anorexia nervosa: loss of weight, varying temperature and pulse rate curves, varying sedimentation reaction, constipation, amenorrhea, low blood pressure and low basal metabolic rate, pathologic urobilinuria and ketonuria. Necropsy reveals organic atrophy like that in long-continued inanition. The increased urobilinuria, associated with ketonuria, is primarily due to carbohydrate deficiency. Disinclination for food is characteristic of schizophrenic persons in the active phase. In anorexia nervosa this disinclination for food is a major symptom. Refusal to eat and the resulting symptoms are regarded as an important pathogenic factor at least in a large number of schizophrenic persons. The author explains the dissociation symptoms of schizophrenia as the outcome of a dynamic-energetic weakening of the ego which occurs in predisposed persons in the active phase when the ability to concentrate is weakened and consciousness is reduced. In this weakening of the ego, malnutrition and hepatic insufficiency, together with prolonged isolation, introversion, inactivity and more accidental complications of infectious or toxic kind, play an important part. The effect of malnutrition is heightened by the deficient utilization of carbohydrates.

## Schweizerische medizinische Wochenschrift, Basel

### 79:185-212 (March 5) 1949

Psychosurgery in U. S. A. M. A. Zehnder.—p. 185.
Investigation on Cutaneous Pruritus Especially in Chronic Icterus. O. Roth.—p. 190.
*Treatment of Acute Leukemia with Exsanguination-Transfusions. G. Gottsegen and Barbara Rona.—p. 193.
New Synthetic Coagulant: Tromexan (G 11705). I. Experimental Study. R. Della Santa.—p. 195.

**Exsanguination Transfusions in Acute Leukemia.**—Gottsegen and Rona treated 1 woman aged 55 with acute myeloblast leukemia with three exsanguination transfusions at intervals of five to ten days. Ten thousand three hundred cubic centimeters of blood was withdrawn and 12,600 cc. of fresh citrated blood was infused. The general condition was slightly improved after the first exsanguination transfusion, but became gradually worse. The transfusions were well tolerated by the patient, in spite of fever and chills. The spleen increased during the treatment; the liver did not change. The number of erythrocytes was increased from 1,540,000 to a maximum of 3,060,000 in the course of the transfusion; hemoglobin rose from 21 to 49 per cent. The number of leukocytes varied from 8,000 to 12,000 before the treatment and was increased during the treatment, reaching 142,000 before death; the number of paramyeloblasts was increased from 14,600 to 130,000 per cubic millimeter. The originally large monocytoid myeloblasts were replaced more and more by micromyeloblasts. From the beginning the latter were absent from the bone marrow and no further change was observed. Death occurred on the twenty-second day after the first exsanguination transfusion. Necropsy revealed a high degree of leukemic infiltration of the inner organs.

## Wiener medizinische Wochenschrift, Vienna

### 99:85-106 (Feb. 26) 1949. Partial Index

*Etiology of Postoperative Tetanus. G. Seidl and E. Vogler.—p. 85.
Injuries of Female Genitals During Sexual Intercourse. F. Rendelstein.—p. 88.
Case of Sudden Arrest of Action of Heart Due to Embolism of Ascendant Aorta. T. Kocourek.—p. 91.

**Postoperative Tetanus.**—Seidl and Vogler report postoperative tetanus endemic from the surgical university clinic of Graz during the period of January to October 1946. Nine cases of postoperative tetanus occurred in 7 men and 2 women between the ages of 24 and 67, 7 of whom were subjected to abdominal operation in the epigastric region, 1 to inguinal herniotomy and 1 to secondary surgical intervention for a war injury of the leg. In all the cases of abdominal operation the clinical picture was characterized by doubtful prodromal symptoms followed by tenderness of the operative wound and by severe disturbances of deglutition and respiration. The toxin produced a local muscular rigidity similar to that of experimental tetanus, which was followed rapidly by generalized tetanus of ascendant type with severe respiratory spasms and choking, resulting in death within a few days. There was a constant incubation period of five to six days. All the patients died, in spite of symptomatic and specific treatment with doses up to 80,000 units of tetanus antitoxin combined with active immunization with tetanus toxoid. A virulent tetanus strain, massive infection, the localization of the point of entrance and the resulting rapid and strong effect of the toxin on the sensitive cells of the body may have been responsible for the therapeutic failures. Clostridium welchii and Clostridium tetani were demonstrated in the talc which had been used by the surgical nurses for the dusting of their rubber gloves. The sterilization of the dusted rubber gloves at a temperature of 106 C. (223 F.) for ten minutes might have been sufficient only for the destruction of Clostridium welchii but not for that of the spores of Clostridium tetani. In the case of the operated veteran the postoperative tetanus represented a fresh exacerbation of latent tetanus germs in the old gunshot wound.

# Book Notices

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**Safeguarding Motherhood.** By Sol T. DeLee, M.D., Clinical Instructor of Obstetrics and Gynecology, University of Illinois, Chicago. Cloth. Price, $2. Pp. 135, with 43 illustrations. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C. 2, 1949.

This small handbook for mothers is well written and beautifully illustrated; it contains a glossary of words not readily understood by a lay reader. It is designed to be a guiding and informative book for the expectant mother, carrying somewhat more information than is necessary in the average case. Concerning the complications that are discussed, the author says, reassuringly, that they usually can be prevented if the patient will follow the advice of her doctor or instructions in the book. Consequently there seems no harm in including unusual subjects, and information available about them may do some good as a warning for those who need it.

Obviously not every patient can read this or any similar book without some degree of panic over what it may suggest as possible to happen to her. That is no valid reason, however, for withholding any and all essential information from women sensible enough not to be so susceptible to suggestion. Fortunately the others are not likely to buy this or any book for study.

Physicians who practice obstetrics might read this book to their own advantage because it tells so concisely and clearly just what should be told to a patient and how.

The advice that sodium bicarbonate be used for "heartburn" might better be changed to the use of another antacid lest excessive sodium intake with its resultant effects on water retention be invited. To point out that interruption of pregnancy on account of German measles and the damage it may do to the tiny fetus is not "therapeutic abortion," according to its legal definition, is probably mere carping criticism.

The entire book is well worth while to the expectant mother, to her husband and even to her doctor.

**Clinical Orthoptics: Diagnosis and Treatment.** By Mary Everist Kramer, Supervisor, The Orthoptic Department, The George Washington University Hospital, Washington, D. C. Edited by Ernest A. W. Sheppard, M.D., Professor of Ophthalmology. The George Washington University School of Medicine, and Louisa Wells-Kramer, Certified Orthoptic Technician, Washington, D. C. Cloth. Price, $8. Pp. 475, with 147 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1949.

This most up-to-date volume has a foreword, with current references by Dr. Sheppard. There is a preface by the orthoptist, M. E. Kramer, and in addition a page of acknowledgments. Three important references are lacking. All are of an ancient vintage although the author seems to be totally unaware of them. First is an old volume entitled "Traitement adjuvant du strabisme" by F. Terrien and A. Hubert, printed in Paris in 1902. Second is "Modern Developments in Orthoptic Training," L. L. Mayer, *Archives of Ophthalmology* 8:888, 1932, in which practically all the instruments with the possible exception of later modifications and the Worth four dot test are amply described in a review. Third is "Congenital Reading Disability-Strephosymbolia," L. L. Mayer, The Journal, April 15, 1933, page 1152, in which all previous references are acknowledged.

Over one third of the text is used to describe anatomy, the visual pathways and oculomotor system, physiology and optics. This may or may not be essential for the orthoptist but certainly enhances the value of the book. At the conclusion of each chapter are questions which are of inestimable value and also references.

An adequate index occupies the last 22 pages. This work is the latest and the best in the English literature on the subject of orthoptics. It should have a place in the library of all orthoptists and ophthalmologists. Even the child psychologist, the pediatrician and the homes of children with ocular dysfunction could benefit from its use.

**Bone Marrow Biopsy: Hæmatology in the Light of Sternal Puncture.** By S. J. Leitner, M.D., Deputy Medical Superintendent, Sanatorium for Tuberculosis, Heiligenschwendi, Berne, Switzerland. English translation revised and edited by C. J. C. Britton, M.D., Ch.B., D.P.H., Consulting Hæmatologist to the Prince of Wales's General Hospital, Tottenham, London, and E. Neumark, M.B., B.S., M.R.C.S., London. Cloth. Price, $8.50. Pp. 433, with 201 illustrations. Grune & Stratton, Inc., 381 4th Ave., New York 16, 1949.

The book is a translation of Dr. Leitner's original monograph with added references, including some to English and American authors. The original work was based mostly on the Continental literature, and most of the American references are to prewar articles, although the references to Dameshek's publications are rather extensive (18 articles). As a whole the subject matter is well presented and reflects a rich personal experience with the material. Chapters are included on technic and morphology of the bone marrow cells. The descriptions are based on cells stained by the May-Grünwald-Giemsa stain, as opposed to Wright's stain, which is more familiar to American workers. Several chapters deal with disease entities, tumors, irradiation, metabolism of the cells, tissue cultures and cultures for pathogens. The colored plates are good, as are also some of the photographs of cells. A number of points are brought out in eighty-one illustrative reports of cases. The book will be an invaluable aid to anyone who wishes a summary of European articles and observations on the bone marrow, presented in readable form.

**Symptoms in Diagnosis.** By Jonathan Campbell Meakins, C.B.E., M.D., D.Sc. Second edition. Cloth. Price, $7.50. Pp. 542, with 111 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1948.

This book deals with the practical aspects of symptomatology, since 50 per cent of all patients do not have physical signs; it explains the symptoms in terms of pathologic physiology. The book is divided into the different systems, such as skin, skeletal and gastrointestinal. The symptoms are considered in detail under each system. The book is not intended primarily as a reference work for differential diagnosis, but it might well be used as such also. However, the book does not intend to cover the whole subject of medicine. Some of the specialties are similarly covered, and unusually well for the size of the volume.

One of the commonest causes for wrong diagnoses is the practice of "putting the patient through the work" or the "mill" and the habit of placing too much dependence on the results of the laboratory procedures. Too often there are false positive reactions to tests or inconclusive negative results or results which are irrelevant. If the patient's symptoms were better understood the physician would have more confidence in making the diagnosis to a greater degree from the symptoms and would have courage enough to have less dependence on some laboratory procedures. The book is well written and well organized.

**Film and Education: A Symposium on the Role of the Film in the Field of Education.** Edited by Godfrey M. Elliott. Cloth. Price, $7.50. Pp. 597. Philosophical Library, Inc., 15 East Fortieth St., New York 16, N. Y., 1948.

This symposium on the role of films in the field of education is comprised of 37 chapters, each prepared by a separate author. The material is divided into five major parts as follows: The Nature of the Educational Film; The Film in the Classroom; The Educational Film Outside the Classroom; The Educational Film Elsewhere, and Administrative Problems and Practices.

The purpose of the book is to present a comprehensive survey of the present and potential use of 16 mm. educational motion pictures. The chapters on "The Psychology of Showing Motion Pictures" and "Research in the Educational Film Field" will interest medical school instructors. The chapter on "Application of the Film in Health and Physical Education" is well done and should be most helpful to health educators. The author of this chapter rightfully points out that the "Health and physical education fields working as they do to develop desirable skills, habits and attitudes in their students, constitute one of the richest areas in the entire school curriculum for the successful use of educational films. No teacher—whether at the elementary, high school, or college level—can afford to overlook the enormous contribution which wise use of the film can make."

Twenty-two pages are devoted to the chapter "The Film in Medical and Nursing Education," two of which are concerned with nursing education. This chapter does not offer a great deal of useful, constructive information. It is probably the only chapter which is punctuated throughout with such phrases as "the author has been successful in starting" and "the author's contribution to this field." While several miscellaneous topics are discussed, they are not tied together in a well organized presentation.

**Das Zwischenhirn: Syndrome, Lokalisationen, Funktionen.** Von W. R. Hess, o.ö. Professor der Physiologie an der Universität Zürich. Cloth. Price, 15 Swiss francs. Pp. 187, with 82 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel 10; Distributed by Grune & Stratton, Inc., 381 4th Ave., New York 16, 1949.

This book is a reprint of two extensive papers which were published in 1947 and 1948 as a supplement to the Helvetica *Physiologica et Pharmacologica Acta*. It also contains as an appendix a detailed description of the technic used in Hess' laboratory. This part is a reprint of a section of a book by the author from 1932. Since the first paper on the vegetative functions of the hypothalamus had been reviewed previously in this journal (Feb. 21, 1948, p. 587) only a note on the second paper dealing with extrapyramidal functions of the diencephalon is necessary. Stimulation of various diencephalic foci shows specific motor effects such as raising and lowering of the head, rotation of the head, contralateral movements of the foreleg and movements of the face. Coagulation of a diencephalic focus results in movements which are opposite to those seen on stimulation. These movements are interpreted as compensatory processes following stimulation of afferent (particularly vestibular) impulses. The difficult text is accompanied by many beautiful illustrations with legends in German and English.

**A History of the Heart and the Circulation.** By Fredrick A. Willius, M.D., M.S. in Med., Professor of Medicine, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Minneapolis, and Thomas J. Dry, M.A., M.B., M.S. in Med., Associate Professor of Medicine, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. Cloth. Price, $8. Pp. 456, with illustrations. W. B. Saunders Co., 218 W. Washington Sq., Philadelphia 5, 1948.

Here is a chronologic presentation of knowledge relating to the heart and the circulation from 5000 B.C. to 1925 A.D. A second portion of the book provides biographies of many great leaders in studies of the heart and the circulation, and a third portion of the book provides a chronologic presentation of data according to such subjects as anatomy, physiology and various specific diseases. Several of the chapters and some portions of others have previously appeared in contributions to periodicals. The presentation is excellent, and the work should be a must for the library of every doctor interested in medical history and particularly for those concerned with cardiology.

**Izydor Kopernicki.** [By] Michal Ćwirko-Godycki. Poznańskie Towarzystwo Przyjaciół Nauk. Prace Komisji Lekarskiej. Tom VI. Zeszyt 2. Paper. Pp. 247. Poznańskie Towarzystwo Przyjaciół Nauk, ul. Sew. Mielzyńskiego 26/27, Posen, 1948.

The monograph by Ćwirko-Godycki presents an evaluation of the scientific work of the great Polish anthropologist Izydor Kopernicki. He was born in the province of Kiev, Russia, in 1825 and died in Cracow, Poland, in 1891. His reputation rests on his investigations of prehistoric man and his researches in morphologic anthropology. He was instrumental in introducing anthropology and he created a new anthropologic school in Poland. He had contributed much to the craniographic and craniologic studies of the prehistoric Slavs.

This monograph in Polish should prove of interest to anthropologists.

**Readings in the Clinical Method in Psychology.** Edited by Robert I. Watson, Washington University School of Medicine, St. Louis, Mo. Price, $4.50. Pp. 740. Harper & Brothers, 49 E. 33d St., New York 16, 1949.

This book is an up-to-date survey of the role of the psychologist in clinical methods. Both the diagnostic and therapeutic work of the psychologists and psychiatrist are discussed, but the emphasis is on therapy. The book is a systematic series of 50 papers by outstanding workers in the field. There are four main divisions according to subject: (1) The Clinical Method; (2) The Functions of the Clinical Psychologist; (3) Diagnostic Methods, and (4) Methods of Treatment. For each section there is a brief comprehensive review of relevant literature which is not found in the readings.

This is an excellent book for student and professional, providing recent information and valuable reference material. It discusses clinical psychology in relation to children, veterans, school systems, science, prisons and hosptials. It brings under one cover a thorough survey of the most important diagnostic methods in practice and the therapeutic method employed in clinical psychology in its various areas of work.

**Essen und Wissen: Eine praktische Ernährungskunde.** Von Hedy Bircher-Rey. Second edition. Cloth. Price, 11.50 Swiss francs. Pp. 203. Rascher & Cie. A.-G., Verlag, Zurich, 1949.

This book, for lay persons, is written by a dietitian whose doctrine constitutes a special brand of food faddism in Europe. The theory is full of misstatements and halftruths. In practice, the emphasis is on the eating of raw vegetables and the horrible things which will happen if they are not eaten. The book will not appeal to physicians.

**Social Work Year Book 1949: A Description of Organized Activities in Social Work and in Related Fields.** Editor: Margaret B. Hodges. Tenth issue. Cloth. Price, $4.50. Pp. 714. Russell Sage Foundation, 130 E. 22nd. St., New York 10, 1949.

Primarily intended for reference, this book is not detailed enough for advanced study in any field of social work.

The book is divided into two parts: Part I contains seventy-nine signed articles by authorities on civil rights, psychiatric social work and camping. Each article is a summary of the steps and general trends now in force in this aspect of social living. Part II is a directory of 546 agencies in social work related to the subject matter of part I, exclusive of profit and propagandistic groups. These are organized under four sections: International Agencies, Governmental and Voluntary National Agencies, and Canadian Agencies. In varying degrees of completeness are given the number of members, the purpose and activities and any publications issued. Topics such as medical care plans, religion and education which are closely related to social work are included.

Of invaluable aid in locating specific information is the index, which contains various cross references by functions in addition to the alphabetical subject arrangement given in the two parts.

**German-English Medical Dictionary.** Compiled by F. S. Schoenewald, M.D. Cloth. Price, 27s.6d. Pp. 241. H. K. Lewis & Co., Ltd., 136 Gower St., London, W.C. 1, 1949.

Considering the size of this dictionary, one could hardly expect it to be complete. However, there is logic in the author's contention that any word not used in the 30,000 pages of medical literature he read as a preliminary for his work is not worth listing. The one new feature that makes this dictionary especially valuable is the explanatory sentence that follows each word. This makes it easier for one to choose words with the correct shade of meaning when translating into German. Besides the purely medicotechnical terms this dictionary lists many words from the lay language which are frequently used in medical literature.

**Hormones and Behavior: A Survey of Interrelationships Between Endocrine Secretions and Patterns of Overt Response.** By Frank A. Beach, Professor of Psychology, Yale University, New Haven, Conn. With a foreword by Earl T. Engle. Cloth. Price, $6.50. Pp. 368. Paul B. Hoeber, Inc., 49 E. 33rd St., New York, 1948.

The psychosomatic approach to human activities has developed new interest in the relationships between body and mind. In those relationships activity of glands and particularly sex glands play a major part. Some of the studies recently reported by psychologists that deal with behavior of animals and men have served to advance greatly the diagnosis of disturbances of the human being from both physical and mental points of view. Especially important have been the studies of anthropoid apes. The author has consulted an enormous periodical literature in the development of this book. The conclusion is reached that in man as in animals the impact of hormonal influences on behavior is pronounced. The work establishes clearly the importance of biologic studies of all living species in understanding man.

# Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

## DANGER OF RADIATION EXPOSURE

**To the Editor:—Is there evidence that fertility, pregnancy and normalcy of offspring are deleteriously affected in physicians who are engaged in x-ray and/or radium work?**

**M.D., New York.**

ANSWER.—Small doses of roentgen rays repeated over a long period can destroy gonad function just as surely as would a few large doses. I have seen several x-ray technicians who stopped menstruating and two roentgenologists previously fertile in whom azoospermia developed. It is reasonable to suppose that dosage insufficient to produce these obvious effects might still do latent harm in the way of diminishing fertility.

Several workers now treat amenorrhea and female infertility by applying so-called stimulating doses of roentgen rays to the ovaries. So far we do not have evidence to prove that this method is harmful either to the patient or to children that she may bear later. Geneticists raise the question whether this procedure might not cause mutations in the genes of which undesirable results would appear in future generations.

Any considerable exposure to roentgen rays can seriously damage or even kill the fetus in utero. The earlier in the pregnancy, the greater the risk.

All the mentioned dangers are reduced to the vanishing point if ordinary precautions are taken. The x-ray tube should be adequately screened, and physicians and technicians should protect themselves with lead shields or aprons whenever there is the least likelihood of exposure.

Those who handle radium constantly ought to exercise similar precautions. In general with radium there is less chance than with roentgen rays that the operator's reproductive organs will be exposed.

## ENDOCRINE DWARFISM

**To the Editor:—A patient is 28 years of age, 4 feet 6 inches (137.2 cm.) tall and weighs 69½ pounds (31.4 Kg.). She does simple factory work but does not travel extensively by transit within the city limits because she feels that her appearance attracts attention. Her mother informs me that she is a high school graduate. On observing her and talking to her one wonders whether she graduated from grammar school. She rarely talks. When she does, it is usually slowly and deliberately and only for the purpose of answering simple questions. Her body and extremities seem to be fairly proportional to her height. The head and face seem to be somewhat large for the trunk and the head also appears to be somewhat retracted. The complexion is sallow and the face moderately bloated. The pulse rate is 72, the blood pressure 90 systolic and 60 diastolic, and the basal metabolic rate was estimated to be minus 35 by the Jones apparatus. She also has a moderate secondary anemia of the iron deficiency type. She has never menstruated and her mother informs me that seven years ago roentgenograms of the long bones revealed a failure of epiphysial fusion. I question whether she is a true midget or some type of endocrine dwarf. Are the basal metabolic rates of midgets the same as those of normal persons or do they show special rates? Are there characteristic roentgen findings in the bones of midgets? Is any form of endocrine therapy of value in this case?**

**Vincent D. Francis, M.D., Brooklyn.**

ANSWER.—This patient appears to have some form of endocrine dwarfism, of which there are three major classifications. In the anterior pituitary type exemplified by the Levy-Lorraine syndrome, the skeletal structure is delicate but symmetric with some delay in epiphysial fusion. The persons are alert and intelligent but somewhat infantile in personality. The dwarfism due to hypothyroidism has usually elements of myxedema or cretinism, which are readily recognized by the thick, bloated facial features, large head, short extremities and retarded mental development. They have also some gonadal deficiency. Short stature due to ovarian agenesis or failure of ovarian development is usually associated with a normal metabolic rate, frequently moderate hypertension and a delay in epiphyseal fusion often associated with osteoporosis (Wilkins, L., and Fleischmann, W.: *J. Clin. Endocrinol.* 4:357, 1944). There may be mental retardation in these cases also. The present case is not typical of any of these three types. It differs from cases of ovarian agenesis in the hypotension and low basal metabolic rate. On the other hand, there is definite evidence of a thyroid deficiency here as shown by the low metabolic rate, anemia, bone picture and even the description of sallow complexion with moderate bloating. It is possible that this is a case of pluriglandular dwarfism in which the anterior pituitary fails to secrete adequate amounts of growth, gonadotropic and thyrotropic hormones. Some authorities believe that a primary thyroid deficiency may give rise to secondary changes in the anterior pituitary. It is suggested that the blood cholesterol content be determined for confirmation of a hypothyroid state as indicated by the low basal rate. If it is found to be elevated, thyroid therapy is indicated, although it is doubted whether much growth will be obtained, because of the advanced age of the patient. Growth hormone preparations available on the market would be of little value at present. Other endocrine therapy should await the response of the patient to thyroid therapy, since it is possible, for example, that menstruation may occur if the ovarian failure is the result of hypothyroidism.

## OCCUPATIONAL OLIGOSPERMIA

**To the Editor:—Three young men, aviation crop dusters, have a severe degree of oligospermia and resultant sterility. The chemical employed for the air spraying is DDT (dichlorodiphenyltrichloroethane) in a xylene base. The men load the plane tanks by hand pump and admit that they inhale and come in close contact with the solution. Does DDT or xylene have any effect on the spermatogenic function of the testes?**

**Paul L. Singer, M.D., Phoenix, Ariz.**

ANSWER.—Neither xylene nor DDT is known specifically to impair spermatogenesis. In the presence of significant occupational diseases such as lead or carbon monoxide poisoning, depressed spermatogenesis may take place as one of several manifestations of damage but never as the sole feature. Occupational xylene poisoning is a rarity. The high boiling point of xylene (139 C.) precludes gross evaporation. While the literature is rich in references to cases of xylene poisoning, the greater number resulted from exposure to mixtures of xylene, toluene and benzene. Real exposure to xylene would have been so associated with eye, mucous membrane and skin irritation as unfailingly to have provoked medical comment.

Many toxic agents of industry have been associated with impotence. Usually such complaints are unwarranted, but oligospermia or azoospermia are objective states subject to laboratory proof. Their occurrence is sufficiently infrequent in young males that 3 closely associated men so afflicted call for further inquiry. Since carbon monoxide produces azoospermia and sterility in animals, it becomes desirable to determine the possibility of repeated low grade exposure to that gas. Control of sperm formation rests with the pituitary gland. Additional investigations should embrace that organ. Search should be made for the usual and somewhat characteristic indications of chronic xylene poisoning. These so closely resemble the well known clinical picture of benzene poisoning that that general pattern may be followed but without anticipating such findings as leukopenia or altered urinary sulfates.

The clinical data on occupational diseases are so lacking with respect to internal secretory organs that the present situation, if well confirmed and adequately explored, may provide an outstanding contribution.

## "IRREGULAR GOUT" AND DIET THERAPY

**To the Editor:—1. Is "irregular gout" (4 to 6 mg. uric acid per hundred cubic centimeters of blood) without the well known attacks a recognized entity? 2. What is the modern point of view as to the anti-uric-acid diet in cases of hyperuricemia or gout? 3. Since the methylxanthines are not supposed to appear as uric acid in the blood at all or only to a minor degree, what is the recognized point of view concerning the intake of coffee, tea, cocoa, chocolate?**

**M.D., New York.**

ANSWER.—Asymptomatic hyperuricemia is a prodromal finding in some patients in whom acute, recurrent gouty arthritis or other physical evidences of gout subsequently develop (for example, renal urate calculi or gravel, and tophi). Hench (J. A. M. A. **116**:453-459 [Feb. 8] 1941) referred to this phase as the "larval" or prearthritic stage of gout. In such instances the hyperuricemia is definite, though it often is transient and variable in intensity. The larval stage of gout is recognized and substantiated most frequently, perhaps, among the relatives of known gouty patients. The incidence of hyperuricemia among 136 blood relatives of 27 gouty patients was found to be 25 per cent (Talbott, J. H.: *Bull. New York Acad. Med.* **18**:318-328 [May] 1942).

Hyperuricemia frequently occurs in the presence of diseases other than gout, such as leukemia, polycythemia vera, psoriasis and renal failure. Obesity or a high intake of purines, or both, and laboratory errors are other circumstances in which elevation of the uric acid in the serum of whole blood may be encountered. Mild hyperuricemia is occasionally observed in patients with rheumatoid arthritis, though the explanation for this is not yet satisfactory. Hyperuricemia should not be the only, or even the principal, evidence on which a diagnosis of gout is based.

When hyperuricemia is consistently present, reduction of the intake of purines would be advisable. Glandular foods (such as liver, sweetbreads, kidneys and brain), sardines in oil, anchovies and meat extracts contain relatively large amounts of purines (160 to 825 mg. per hundred grams), but other meats such as bacon, beef, pork, veal and certain fish and fowl contain purines in amounts ranging from 75 to 150 mg. per hundred grams of the food. The quantity as well as the type of food in the patient's daily intake must be considered. Until there is a specific remedy for gout, patients so afflicted should eliminate or decrease the intake of purines as much as is necessary to help maintain adequate control of the systemic manifestations of the disease.

Methylxanthines, including coffee and other caffeine-containing beverages, theobromine and related xanthine drugs, can be used with impunity by patients with gout as these substances are not metabolized to urates (Query and Minor Notes, J. A. M. A. **137**:330 [May 15] 1948).

Urate diuretics (cinchophen, salicylates) cannot be considered as substitutes for the restriction of purines in the diet in the control of gout. However, when gout cannot be adequately controlled by dietary management alone, the supplemental use of a urate diuretic in appropriate doses may also be indicated.

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## SEDIMENTATION RATE IN BRUCELLOSIS

*To the Editor:*—**One of our staff has made the observation that patients with brucellosis do not have an elevated sedimentation rate. Your opinion and references would be appreciated.**

**Arthur W. Allen, M.D., Ann Arbor, Mich.**

[This inquiry was referred to two authorities, whose respective replies follows.—Ed.]

Answer.—It is agreed that patients with brucellosis frequently show a normal sedimentation rate. There are exceptions, however, in cases of classic brucellosis that show an elevation of the sedimentation rate, as reported by Calder and associates (Calder, R. M.; Steen, C., and Baker, L.: Blood Studies in Brucellosis, J. A. M. A. **112**:1893 [May 13] 1939). These authors found that slow rates were common and that moderate acceleration occurred in slightly more than one third of the cases. Rapid rates were usually explained on the basis of complications such as arthritis or effusion. In a recent review of the subject by Spink (Veterans Administration Technical Bulletin, T. B. 10-49, February 28, 1949), the author states: "The erythrocyte sedimentation rate is of no diagnostic value, since either normal or accelerated values may be obtained. The sedimentation rate may be of some prognostic aid when it is rapid, in the sense that a persistently abnormal value may indicate the presence of active disease."

The sedimentation rate, when increased, is a nonspecific clinical test that is usually correlated with an increase in the concentration of the plasma fibrinogen, and occasionally the serum globulins. Fever, per se, as produced by external radiation of heat, does not produce an increase in the sedimentation rate or of the fibrinogen (Ham, T. H., and Curtis, F. C.; Plasma Fibrinogen Response in Man, *Medicine* **17**:413, 1938). It is also apparent from the clinical use of the sedimentation test that certain diseases such as many virus infections and brucellosis are conditions that are not fibrinogenic in some instances.

Answer.—The observation mentioned is in agreement with the most frequent general experience with brucellosis that the commonest clinical form, without obvious regional localizations, is usually associated with a normal sedimentation rate. Exceptions are numerous, however, not only in the presence of symptomatic or serious regional localizations but also when these cannot be detected. Harris has estimated the frequency of "abnormal rates" at about 20 per cent.

References:

Harris, H. J.: Brucellosis: A Résumé of Diagnosis and Treatment, South Dakota J. Med. & Pharm. **1**:1-10 (Jan.) 1948.

Steinberg, C. L., Brucellosis as a Cause of Sacroiliac Arthritis, J. A. M. A. **138**:15-19 (Sept. 4) 1948.

Spink, W. W.; Hall, W. H.; Shaffer, J. M., and Braude, A. I.: Human Brucellosis: Its Specific Treatment with a Combination of Streptomycin and Sulfadiazine, J. A. M. A. **136**:[illegible] (Feb. 7) 1948.

Howe, C., and Heyl, J. T.: [illegible] in Acute Brucellosis: Report of a Case, New E[illegible] J. [illegible] **238**:[illegible]31-434 (March 25) 1948.

Harvey, W. A.: Pulmonary Brucellosis, Ann. Int. Med. **28**:768-781 (April) 1948.

Harris, H. J., and Jett, P. C.: Streptomycin and Sulfadiazine (Combined) in Chronic Brucellosis, J. A. M. A. **137**:363-364 (May 22) 1948.

## BLOODY DISCHARGE FROM NIPPLE

*To the Editor:*—**A woman aged 53 has one child aged 13. The pregnancy and delivery were uneventful. The mother, for about four weeks, has had slight straw-colored (serosanguineous) bloody discharge of about 1 or 2 drops daily from the right nipple. The patient is otherwise in good health. Thorough and repeated examination of both breasts did not reveal perceptible evidence of any mass, tenderness or discoloration. Neither nipple is tender. The breasts are of the same size, and both nipples are normal, symmetrical in shape, location, direction and tonus. There is no distortion of nipples either singly or in comparison. Palpable nodes were not observed *in axilla, neck or sternal area.* The right nipple is slightly larger than the left but always has been so. There is not any so-called orange peel or pig skin sign in the skin about the nipple or anywhere else about the breast. The secretion has been too scanty for cytologic study. I contemplate having roentgenograms made. What more can I do to make a diagnosis of presence or absence of cancer? I would not know where to obtain a specimen for biopsy, and I still feel that I have time to search for a diagnosis before considering sending the patient to a hospital for a radical operation. She has not lost weight. Could nipple secretion at this age (patient still menstruates, but somewhat irregularly) be endocrine in nature? I consider the patient to be in the climacteric. A slight amount of the nipple secretion gave a positive reaction for hemoglobin. There is no history of local injury or trauma.**

**M.D., New Jersey.**

Answer.—Unilateral bleeding from the breast is always a problem, especially when a mass cannot be felt. In the past the danger of cancer in such a situation has been exaggerated, and we now know that only in a minority of instances is a malignant change in the breast to be feared. When the nipple is normal usually the bleeding is from intraductal hyperplasia, which tends to be multiple in location and which may not become prominent enough at any one point to produce a palpable mass. Occasionally careful milking of the breast with a finger from the periphery to the nipple will reveal which duct system is involved. This segment can then be excised. If localization is not possible, surgical exploration of the subareolar region has been recommended by Haageson. However, as the inquirer points out, where to look is a problem and a thorough exploration may yield negative results. A more feasible plan is to treat the affected breast with fractional irradiation for a total of 1,000 to 1,500 r. Such therapy usually dries the secretion and arrests the hyperplasia. Of course, periodic examination of the breast is advisable thereafter.

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## ALOPECIA

*To the Editor:*—**Can you offer anything new in the treatment of alopecia totalis? The usual therapy has already been tried for my patient with disheartening results. My patient is a man aged 34, otherwise in excellent health but showing areas of loss of hair from the scalp, both eyebrows and eyelids, the entire face and parts of the extremities.**

**Jay Elliott Arliss, M.D., Brooklyn.**

Answer.—The duration of the alopecia is not stated, and this is an important factor in the prognosis. The longer the disorder has been present, the less likely it is to yield. The patient is arriving at an age, too, when the results from treatment become less favorable. This patient's loss of hair should not be classed as alopecia totalis, since the fall is in areas only. The presence of some hair is the bright spot in this otherwise bleak picture. Practically all local remedies may be classified as stimulants, such as cantharides, antiseptics, such as sulfur, and reducing agents, as exemplified by chrysarobin. The physical agents probably act as stimulants, too. The faradic and galvanic currents and ultraviolet rays are in this group, although the latter modality possesses oxidizing powers. I treated 2 young men with intractable alopecia areata lasting many years who subsequently got well spontaneously while in the Army during the recent war. One wonders what factor or factors were responsible for these happy results.

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## DONOR DISQUALIFICATION

*To the Editor:*—**Should donors be rejected for any of the following reasons: (1) history of severe injury during the last war, necessitating plasma (presumably pooled) and blood (banked blood?) transfusions, either from American or German sources; (2) history of having been, during the war, in the South Pacific, Africa, Sicily or Italy; (3) history of presumably infectious hepatitis with jaundice, three years or more previously? Is there evidence that the virus of infectious hepatitis or homologous serum jaundice persists indefinitely in human beings?**

**M.D., Pennsylvania.**

Answer.—1. No. 2. No, unless there is some evidence of malaria. 3. Nothing is known about the survival in vivo of the virus of infectious hepatitis; consequently, a definite history of jaundice attributable to infectious hepatitis should permanently disqualify the donor, unless the blood is used for the production of plasma and an ultraviolet irradiation apparatus is available.

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# THIOARSENITES IN AMEBIASIS

## A Clinical Appraisal of New Amebacides

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At the beginning of World War II, a number of articles appeared on the therapy of amebiasis,[1] in anticipation of an increasing need for control. These were largely generalizations on the use of drugs introduced within the preceding ten years, notably carbarsone, vioform® (iodochlorohydroxyquinoline) and diodoquin® (diiodo-hydroxyquinoline). Nelson[1a] stated, ". . . when a number of different agents are in use in the treatment of a particular pathologic state or infection, none of the agents is completely satisfactory. In no field is this more true than in the treatment of amebiasis."

Emetine, long held by the British to be effective, either as the hydrochloride for parenteral use or as the bismuth iodide for oral administration, should not be considered a curative agent. It will control symptoms of acute dysentery and hepatitis, because it accumulates in the liver.[2] The encysted forms of Endameba histolytica are not killed by therapeutic levels of emetine in any form. Relapse is the rule rather than the exception after this drug is used alone, regardless of total amount given and duration of therapy. It is recognized that when emetine is employed patients should be hospitalized and care must be taken to avoid possible damage to cardiac muscle.

Amebiasis, as it is known in the Western hemisphere, is essentially a chronic recurrent infection which may remain dormant for years. Some agent other than emetine is required for control and complete eradication of the cysts as well as the motile forms of E. histolytica. According to Adams,[3] in his writing of British experience with the disease, this basic distinction has not been recognized generally. The common practice, in some areas, of giving periodic courses of emetine should be discouraged, because of the possibility of development of drug-resistant strains.

Historically, the halogenated hydroxyquinolines, beginning with Mühlens' and Menk's[4] introduction of chiniofon (as yatren®) in 1921, vioform® by Anderson and Koch[5] in 1931 and diodoquin® by Tenney[6] in 1936, have had considerable vogue as amebacides. Despite recent reversals of early opinions of effectiveness (D'Antoni[7]), they still are used extensively, almost always in high dosage and with other agents. The United States Navy's refusal to include diodoquin® among essential medical supplies during World War II is a reflection of the criticism being leveled against this agent. David and his co-workers,[8] in commenting on the toxic effects of diodoquin® as described by Silverman and Leslie,[9] decried the uncontrolled oral use of amebacides. Like other available agents, they are potentially toxic, and David, Phatak and Zener[8] have shown iodine levels in the blood after oral use of diodoquin.® These ranged from 45.6 to 437.25 micrograms per hundred cubic centimeters. It is not known what proportion of this is free iodide and whether diodoquin® exists as such in clinically effective amounts. Appreciable, but lower, iodine levels in the blood followed vioform® medication over a ten day period. It is possible that this compound does not break down as readily as diodoquin.®

More recently, studies of the metabolism of chiniofon, utilizing radioactive iodine, have revealed that absorption of the halogenated hydroxyquinoline also occurs. The amount was small, however, and, according to Albright, Tabern and Gordon,[10] averaged 12.9 per cent of the dose given. Absorption was prompt, the peak blood level appeared in two hours and the highest urinary level was found during the initial three hours

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[1] (a) Nelson, E. E.: The Drugs Used in Treatment of Amebiasis, Internat. M. Digest **39:** 54 (July) 1941. (b) Manson-Bahr, P.: Amebic Dysentery and Its Effective Treatment, Brit. M. J. **2:** 255 (Aug. 23) 1941.

[2] Parmer, L. G.: On the Relative Efficacy of Emetine in Intestinal and Hepatic Amebiasis, Proc. Soc. Exper. Biol. & Med. **68:** 362 (June) 1948.

[3] Adams, A. R. D.: Amoebiasis with Special Reference to Treatment, Tr. Roy. Soc. Trop. Med. Hyg. **38:** *237 (March) 1943.*

[4] Mühlens, P., and Menk, W.: Ueber Behandlungsversuche der chronischen Amoebenruhr mit Yatren, München med. Wchnschr. **68:** 802 (June) 1921.

[5] Anderson, H. H., and Koch, D. A.: Iodochloroxyquinoline (vioform, N.N.R.) as an Amebacide in Macaques, Proc. Soc. Exper. Biol. & Med. **28:** 838 (April) 1931.

[6] Tenney, A. C.: The Present Concept of Entameba histolytica Infestation, Illinois M. J. **70:** 145 (Aug.) 1936.

[7] D'Antoni, J.: P[illegible] the authors.

[8] David, N. A.: [illegible] Amebacides, J. A. M. A. **129:** 572 (Oct.) 1945. [illegible], N. M., and Zener, F. B.: [illegible] and Diiodohydroxyquinoline: Animal Toxicty [illegible] Am. J. Trop. Med. **24:** 29 (Jan.) 1944.

[9] [illegible], and Leslie, A.: Intractable Amebic Colitis, with Special Reference to the Ulcero-Necrotic Form, J. A. M. A. **129:** 187 (Sept. 15) 1945.

[10] Albright, E. C., Tabern, D. L., and Gordon, E. S.: The Metabolism of Chiniofon Using Radioactive Iodine, Am. J. Trop. Med. **27:** 553 (Sept.) 1947.

after ingestion. The bulk of excretion occurred by the twelfth hour, and it was complete in forty-eight hours. However, free iodide was split off from the molecule and only 7.4 per cent of the total administered chiniofon was excreted as such. The belief was expressed that blood levels of clinical importance could not be attained even with rapid absorption, because of the low percentage absorbed, the rapid urinary excretion and the body's ability to break down the drug into free iodide and organic rings.

The other chemical types most extensively used include the arsenicals, carbarsone and acetarsone. Marchoux's [11] early introduction of acetarsone (as stovarsol®) was responsible for its trial in this country. Bender [12] and others have shown frequent cutaneous and other reactions to therapeutic doses which have led to its abandonment for general use as an amebacide in the United States. Thus, carbarsone among agents in this class has enjoyed most widespread use and is considered by most authorities as a safe agent in the absence of contraindications to arsenical therapy. For the majority of patients carbarsone, alone or in combination with agents of different chemical types, is satisfactory. Experience during the recent war revealed that doses larger than originally recommended can be used even under field conditions. Hakansson anticipated this in 1938.[13]

It has been observed that, in certain patients who have been treated for relief of symptoms alone and because of inadequate follow-up, chronic resistant relapsing amebiasis has developed. In addition, there are patients who have had the disease for years, with varying degrees of invalidism, who have had no specific therapy and who present a therapeutic problem from the outset. Mackie and his co-workers,[14] in a recent survey of selected war veterans in North Carolina, has shown that among 363 persons adequately examined 40 per cent had amebiasis. He stated, ". . . almost without exception these persons were having symptoms of sufficient significance to interfere with their activity."

Palmer,[15] in an excellent follow-up study of a group of 40 veterans, said that clinical observations on wartime military amebiasis were hampered by the constant necessity for moving the patient from one area to another, with the result that final evaluation of the long range results of therapy was not possible. His report of results on conventional treatment schedules, with an average of two and a half months' observation after "cure," emphasized the tendency for remission or exacerbation to occur during observation. The persistence of colon tenderness and diarrhea, without blood, in patients not passing amebas or showing evident pathologic changes on sigmoidoscopic examination was not uncommon. Only 2 of 40 patients had spontaneous remissions and could not be found to harbor E. histolytica during the period of observation. Blunderbuss therapy of the remainder, in which a total of sixty-two courses of treatment were required, brought about some semblance of control. It was concluded that there was no apparent relationship between size of drug dose and its effectiveness in amebic colitis.

The experiences cited indicate dissatisfaction and lack of agreement regarding the therapy of amebiasis. It was for this reason that the present study was started in 1944, with the hope of developing a more effective amebacide than any now available. The results of the preliminary studies, leading to the current work with the thioarsenites, have been reported elsewhere.[16] In excess of 250 agents have been examined, representing a variety of chemical types, with in vitro and in vivo technics developed at the University of California in 1931.[17]

### EXPERIMENTAL STUDIES WITH THE THIOARSENITES

Carbarsone oxide (chemotherapy center no. 606),[18] a trivalent arsenical, identical chemically with carbarsone U. S. P. except that the arsenic has a valence of 3 rather than 5, was found to be the most active agent of a great variety tested in the laboratory. There is evidence that the reduced form of arsenic is the more active against E. histolytica, either in vitro or in vivo. Test tube comparisons of the two forms indicate at least a ten times greater direct action for carbarsone oxide. Likewise, against host tissues there is greater toxicity, and the gastric mucosa reflects this by showing hyperemia on contact with trivalent arsenic.

TABLE 1.—*Comparative Amebacidal Activities of Carbarsone Oxide and Its Dithio Derivatives in Vitro and in Vivo*

| Compound | Concentration Required in Egg Slope Medium; 48 Hours Exposure at 37 C.* | Daily Oral Dose (Mg./Kg.) Given Daily/No. Days to Clear Infected Macaques† |
|---|---|---|
| Carbarsone, U.S.P. (p-carbamidophenyl arsenic acid) | 1:2,000-1:4,000 | 30-250 over 10-23 days; partially effective in 3 of 10 animals |
| Carbarsone oxide (p-carbamidophenyl arsenous acid) | 1:40,000-1:400,000 | 11-40 over 5 to 30 days; effective in 3 of 5 animals |
| p-carbamidophenyl-bis (carboxymethylmercapto)arsine (C.C. 914) | 1:10,000-1:50,000 | 20-50 over 8 to 30 days; effective in 5 of 5 animals |
| p-carbamidophenyl-bis (2-carboxyphenylmercapto)arsine (C.C. 1037) | 1:10,000-1:50,000 | 20-50 over 8 to 30 days; effective in 5 of 5 animals |
| Emetine hydrochloride, U.S.P. | 1:10,000-1:20,000 | 3-10 over 5 to 10 days; effective in 2 of 4‡ animals |

* Anderson and Hansen,[16] and Anderson, David and Koch.[17]
† Over three month follow-up period.
‡ Toxic to cardiac muscle within the therapeutic range.

It has been shown further that the substitution of –SH groups for oxygen detoxifies arsenicals for hosts' tissue cells. By the development of two derivatives, the dithiocarboxymethyl (chemotherapy center no. 914) and the dithiocarboxyphenyl (chemotherapy center no. 1037), antiamebic activity was retained and the toxicity for host's tissues materially reduced. In table 1 are summarized the comparative in vitro and in vivo (against natural monkey amebiasis) activities.

The two thioarsenites exhibited levels of activity comparable to that of carbarsone oxide and significantly greater than that of carbarsone U. S. P. Comparative toxicity studies in mice, rats and rabbits, on oral or parenteral administration, revealed greater tolerance in "acute and chronic" dosage. There was less tissue reaction, especially when the thioarsenites were given orally. These data in the several species studied are summarized in table 2. Monkeys given 25 mg. per kilogram of body weight by mouth for thirty doses over two months exhibited no impairment of hepatic, renal or cardiac function and no evidence of damage to the skin, central nervous system or blood. At higher levels, e. g., 50 mg. per kilogram of body weight, there was, at autopsy, slight fatty infiltration of the liver and, after the dithiocarboxymethyl derivative (C. C. 914), mild albuminoid degeneration of the convoluted tubules of the kidneys. Other pharmacologic data, including distribution of arsenic throughout the tissues of rats, rabbits and monkeys, have been reported elsewhere.[19] It is of special interest that the distribution of arsenic, given in the trivalent form, differed from amounts noted after pentavalent arsenic administration, in that there were higher levels in the bile, liver, kidney, urine and intestinal tract. Appreciable tissue levels, especially in the blood, persisted in rats for at least nine days after the last dose in short term chronic toxicity tests. These observations, as well as the low levels of arsenic detected in the brain, favored consideration of the trivalent thioarsenites for application in amebiasis in human beings.

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[11] Marchoux, E.: Le stovarsol guérit rapidement la dysenterie amibienne, Bull. Soc. path. exot. **16**:79, 1923.

[12] Bender, W. L.: Stovarsol Poisoning, Am. J. M. Sc. **174**:819 (Dec.) 1927.

[13] Hakansson, E. G.: On the Effectivness of Carbarsone as a Remedy for Amoebiasis, Am. J. Trop. Med. **18**:245 (May) 1938.

[14] Mackie, T. T.: Personal communication to the authors.

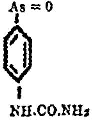
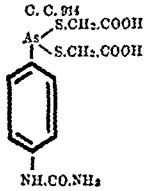
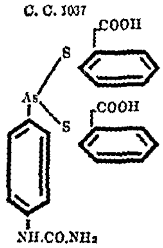
[15] Palmer, E. D.: Military Amebiasis, Am. J. Trop. Med. **26**:543 (Sept.) 1946.

[16] Anderson, H. H., and Hansen, E. L.: Amebacides, in Kirk, R. E., and Othmer, D. F.: Encyclopedia of Chemical Technology, New York, Interscience Publishers, Inc., 1947, vol 1, p. 656.

[17] Anderson, H. H.; David, N. A., and Koch, D. A.: Effects of the Halogenation of Oxyquinoline on Biological Activity, Proc. Soc. Exper. Biol. & Med. **28**:484 (Feb.) 1931. Leake, C. D.: Chemotherapy of Amebiasis, J. A. M. A. **98**:195 (Jan. 16) 1932.

[18] Supplies of the arsenicals and other material aid required for the study were made possible by the Lilly Research Laboratories, Indianapolis (6).

TABLE 2.—*Toxic and Tolerated Doses of Carbarsone Oxide and Its Dithio Derivatives**

| Species and Route Used (Single Doses Expressed in Mg./Kg.)† | | Carbarsone Oxide  | C. C. 914  | C. C. 1037  |
|---|---|---|---|---|
| Mice $L.D._{50}$ | I.V. | 41.3 ± 1.4‡ | 42.6 ± 1.9‡ | 120 ± 6.2 |
| | I.P. | 59 ± 6.7 | 100 ± 9.0 | 265 ± 12.2 |
| Rats $L.D._{50}$ | I.V. | 17 | 29 | 70 |
| | I.P. | 55 ± 2.1 | 75 ± 4.7 | 76 ± 4.1 |
| | I.G. | 510 ± 40 | 1,000 ± 39 | 1,220 ± 54 |
| Rabbits (lethal range) | I.V. | 20-40 | 100 | 100-300 |
| (tolerated level) | I.G. | 75 | 300 | 200-300 |
| Monkeys, oral (tolerated level) | | 40 | 50 | 50 |
| Man, oral (tolerated level) | | 1.5 (daily) | 10 (daily) | 10 (daily) |

* See Anderson, Hansen, Sah and Cafiso[19] for further details.
† I.P., intraperitoneal; I.V., intravenous; I.G., intragastric.
‡ Observations of Dr. K. K. Chen, Lilly Research Laboratories.

CLINICAL EVALUATION OF THE THIOARSENITES

Adequate standards of diagnosis, established by Reed and his co-workers,[20] have been adapted to the present study. Critical diagnosis was dependent on microscopic exposition of E. histolytica in iron-hematoxylin stained stool specimens. Each patient, in the current study, had three or more examinations of the stool before treatment and from six to twelve follow-up examinations over the four months after therapy was concluded. Freshly passed specimens were always requested for these examinations.

A complete history and clinical examination was obtained in each case, including proctoscopic examination whenever warranted. Laboratory studies, before as well as after therapy, included the following tests: hemoglobin (Sahli) determination, total and differential counts of white and red blood cells, urinalysis, test of hepatic function with sulfobromophthalein sodium, test of renal function with phenolsulfonphthalein and electrocardiographic tracings (in the first 50 patients treated in Memphis). Other laboratory procedures required in individual circumstances, such as roentgen examination of the lower bowel, were also repeated after therapy was concluded. An attempt was made in each case to weigh the probable influence of E. histolytica in each patient on presentation of symptoms and signs and to determine whether relief was afforded after treatment. Except in rare instances, no other antiamebic drugs were given concurrently.

For clarity, the report of the two hospital groups will be presented separately. Comparisons of the Memphis hospital patients with patients in the Hospital San Juan de Dios will be made whenever pertinent. A perusal of table 3 will indicate that there was an appreciable difference in occurrence of the pathogenic ameba (E. histolytica) in patients from the middle section of the United States and in patients from Central America. Despite the greater number of infected persons in the Costa Rican group, with higher

TABLE 3.—*Occurrence of E. Histolytica and Other Intestinal Protozoa in Persons Examined Three or More Times in Two Hospitals**

| John Gaston Hospital,† Memphis, July-August 1947 Number/Percentage | Parasites Encountered | Hospital San Juan de Dios San Jose de Costa Rica,‡ September-October 1947 Number/Percentage |
|---|---|---|
| 42/17.0§ | E. histolytica.................... | 41/37.5‖ |
| 5/ 2.0 | Dientameba fragilis............ | 0/— |
| 26/10.5 | Giardia lamblia.................. | 16/14.6 |
| 53/21.5 | Endameba coli.................. | 34/31.0 |
| 51/20.7 | | 3/ 2.4 |
| | | 16/14.6 |
| 4/ 3.6 | | |
| | Balantidium coli................ | 2/ 1.8 |

* The patients in Costa Rica were selected from the wards when symptoms or signs were suggestive of parasitic disease.
† Number of persons examined, 479; 246 examined three or more times.
‡ Number of persons examined, 258; 109 examined three or more times.
§ Twenty-two exhibited trophozoites.
‖ *Four exhibited trophozoites.*

TABLE 4.—*Clinical Status of Patients Harboring Endameba Histolytica, Dientameba Fragilis and Balantidium coli in the Two Hospital Groups*

| John Gaston Hospital, Memphis | Symptoms or Signs | Hospital San Juan de Dios, San José de Costa Rica, A.C. |
|---|---|---|
| 11 of 47* | Impaired nutrition................ | 13 of 43† |
| 6 | Poorly nourished.................. | 8 |
| 1 | Severe malnutrition............... | 5 |
| 2 within 10 days<br>5 within 3 months<br>8 within 3 years<br>4 more than 3 years | Amebiasis.......................... | 7 within 10 days<br>18 within 3 months<br>5 within 3 years<br>— |
| | Hepatitis.......................... | 3 |
| 17 | Diarrhea or dysentery (or history of).................... | 14 |
| 10 | Abdominal pain................... | 17 |
| 2 | Constipation...................... | — |
| 1 | Anorexia and/or nausea.......... | 6 |
| 21 of 26 examined had ulceration, bleeding areas or granulation | Proctoscopic observations........ | 11 of 13 examined had ulceration, bleeding areas or granulation |

* Thirty-six were Negroes; 5 patients with Dientameba fragilis were included; 2 patients with Balantidium coli were included.
† Concurrent parasitic diseases: malaria in 19; strongyloidiasis in 6; hookworm or ascariasis in 4; giardiasis in 1.

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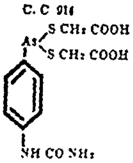
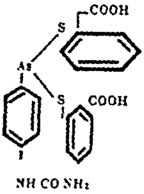
19. Anderson, H. H.; Hansen, E. L.; Sah, P. P. T., and Cafiso, J. R.: Carbarsone Oxide and Its Dithiocarboxymethyl and Dithiocarboxyphenyl Derivatives, J. Pharmacol. & Exper. Therap. **91**: 112 (Oct.) 1947.
20. Reed, A. C.; Anderson, H. H.; David, N. A., and Leake, C. D.: Carbarsone in the Treatment of Amebiasis, J. A. M. A. **98**: 189 (Jan. 16) 1932.

frequency of symptoms and signs, it is noteworthy that trophozoites were more frequently encountered in Memphis patients. Nonpathogens were generally commoner in the former group. It should be emphasized that, in general, patients with symptoms or signs suggestive of parasitic disease of the intestines were studied in Costa Rica. This might readily account for the more than two times difference in incidence between the two groups.

The clinical status of the two groups is summarized in table 4. There were 5 children (ages 2 to 6 years) in the Memphis group, and 7 children (ages 5 to 13 years) in the Costa Rican group. Nutrition was impaired in 18 of the 47 Memphis patients, while 26 of 43 infected persons in Costa Rica were poorly nourished. There was an indication of hypoproteinemia among Costa Ricans where low hemoglobin levels were encountered. Thus, 1 had a hemoglobin level of 9 per cent, 8 between 30 and 45 per cent and 20 from 50 to 70 per cent. In contrast, only 13 Memphis patients had hemoglobin levels below 70 per cent. White cell counts above 9,000 per cubic centimeter were encountered in 15 of the 47 Memphis patients and in 14 of the 43 Costa Ricans. Red cell fluctuations were not pronounced in Memphis, but in Costa Rica there were 24 persons among the malnourished group who had counts below 4,000,000 per cubic centimeter.

TABLE 5.—*Progress of Therapy with Thioarsenites in Two Hospital Groups*

| Drug Used | Total Dosage (Oral) and Duration of Therapy | Hospital | No. Cleared*/ No. Treated |
|---|---|---|---|
| C. C. 914<br><br>Arsenic content, 20 7% | 3.0-4.2 Gm. in 7-10 days | John Gaston, Memphis | 6 of 7 patients |
| | 6.0-7.2 Gm. in 10-24 days | John Gaston, Memphis | 11 of 13 patients |
| | 6.0 Gm. in 10 days | San Juan de Dios, San José de Costa Rica | 16 of 18 patients |
| | (Adult [45 + Kg.] dose; children according to weight) | Subtotal: | 33 of 38 cleared† |
| C C 1037<br><br>Arsenic content, 14 7% | 3.0-4.2 Gm. in 7-10 days | John Gaston, Memphis | 9 of 10 patients |
| | 6.0-7.2 Gm. in 10-24 days | John Gaston, Memphis | 11 of 12 patients |
| | 6.0 Gm. in 10 days | San Juan de Dios, San José de Costa Rica | 21 of 22 patients |
| | | Subtotal: | 41 of 44 cleared† |
| | (as above) | | |
| Additional Rectal Therapy | | | |
| | (C. C. 1037) 3.0-6.0 Gm. in 6 days | John Gaston, Memphis | 4 of 4 patients‡ |
| | (C. C. 1037) 3.0-6.0 Gm. in 6 days | San Juan de Dios, San José de Costa Rica | 8 of 9 patients§ (one receiving rectal therapy alone did not clear) |

* Six to 12 stool specimens examined over four or more months.

† Including 2 of 6 who vomited in each group.

‡ Including 2 not cleared with oral therapy.

§ One of 3 with hepatitis also received emetine hydrochloride, 0.5 Gm. in 5 days.

The onset of amebiasis was more acute and was apparent in a greater number of the Costa Rican patients. Diarrhea or dysentery was not significantly different in the two groups, although it was accompanied with abdominal pain and bloody stools more frequently in Costa Rica. Anorexia and nausea or vomiting occurred in 6 Costa Ricans, but concurrent disease may well have accounted for these symptoms. Likewise, hepatitis occurred in 3 and tenderness of the cecum and colon was elicited in 10 of the Central Americans.

Proctoscopic observations were compatible with the diagnosis in 21 of 26 Memphis patients and in 11 of the 13 Costa Ricans examined. These observations included ulceration, bleeding on manipulation and granulating patches in the rectosigmoid area.

Results of laboratory tests, other than those already noted, were not remarkable. The 3 Costa Rican patients with hepatitis had retention of sulfobromophthalein sodium from 5 to 20 per cent at the end of 45 minutes. Two others had low phenolsulfonphthalein excretion, 1 of 30 per cent and the other 40 per cent in 2 hours.

Of the 90 patients harboring E. histolytica, Dientameba fragilis (5 patients) and Balantidium coli (2 patients), in both hospitals, 82 were treated. Other drugs, such as diodoquin® and carbarsone, were given (by others) to 8 patients, which precluded their inclusion in our study with the thioarsenites. Among 3 of the 82 patients included, 1 each had received emetine, chiniofon or sulfadiazine prior to our examination. Table 5 summarizes the progress of therapy with the thioarsenites in the two hospital groups. The total oral dosage for adults, with each drug, in the Memphis group varied from 3.0 to 7.2 Gm. given over seven to twenty-four days. In addition, 4 patients in Memphis also received rectal instillations of C. C. 1037 in 3.0 to 6.0 Gm. amounts over six days. The Costa Rican group were given the same oral dosage throughout, for each thioarsenite, namely, 6.0 Gm. in ten days, for the adult (weighing 45 Kg. or more). Children received smaller doses based on weight. Nine Costa Rican patients with severe dysentery or hepatitis also received from 3.0 to 6.0 Gm. of C. C. 1037 by rectum during six days. The drug was not given concurrently by mouth to these patients.

Comparisons between the two thioarsenites indicated that each was *effective and there was little difference* in response to them. Thirty-three of the 38 patients given drug 914 and 41 of 44 given drug 1037 were freed of amebas. Among the 3 patients with hepatitis, 1 was given emetine hydrochloride, 0.5 Gm. parenterally in five days. This was the only other antiamebic drug administered.

In each hospital group there were 6 patients who were nauseated or vomited after the first one to three days of therapy. Phenyl salicylate coating of the 100 mg. tablets permitted completion of therapy in all but 1 patient. There were no other evidences of toxicity due to drugs, except for increased bowel movements, which did not continue after the third to fifth day of treatment. One patient, in Memphis, died of hemorrhage due to intercurrent pulmonary infection during the follow-up period. At autopsy there was no evidence of amebiasis or of toxicity due to drugs.

### RESULT OF ANTIAMEBIC THERAPY

The clinical status of the patients in the two groups improved during their stay in the hospital (Memphis summary, Anderson and his co-workers[21]). They remained only for diagnosis, drug therapy and immediate follow-up laboratory examination, because of need for their beds by others. Weight gains were encountered, particularly in the poorly nourished patients and especially in the Costa Ricans. This could be attributed to adequate diet and rest in bed and was not entirely dependent on drug therapy. Likewise, hemoglobin levels and red blood cell counts were elevated, in part because of increased protein intake. No special dietary regimen was established, however. The white blood cell counts, when elevated, were reduced to average values and in general were from 2,000 to 6,000 cells lower than at the beginning of therapy. In no patient was granulocytopenia encountered or other evidence of blood cell destruction.

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[21] Anderson, H. H.; Johnstone, H. G.; Packer, H.; Young, J. D.; Callison, M. K.; Hambly, A. S., Jr.; Anderson, J. Van D., and Reed, R. K.: Incidence and Control of Amebiasis and Other Intestinal Protozoan Infections in a Memphis Hospital, Am. J. Trop. Med. 28: 373 (May) 1948.

In the patients with diarrhea or dysentery the number of movements was reduced to from one to three daily, except in 2 ambulatory patients who had had dysentery for more than two years. In these, bismuth subcarbonate was required to control the number and character of the movements. Proctoscopic examinations of these patients, as well as of others who exhibited changes before therapy, indicated improvement. Since the follow-up examination was made immediately after therapy and before discharge from the hospital, it was not possible to demonstrate significant changes in the appearance of the lower bowel. Certainly, there was no evidence of extension of the disease or of untoward effects of drugs on the mucosa after application of retention enemas. In cases of acute dysentery there was evidence of healing of the surface of the bowel. In such instances, where symptom relief is imperative, rectal use of thioarsenites seems effective.

Results of other tests of function of the heart, kidneys and liver were not altered by therapy. The only exceptions were in the 3 Costa Rican patients with amebic hepatitis, where the retention of sulfobromophthalein sodium at 45 minutes did not occur after thioarsenite therapy. The 2 other Costa Ricans who had low phenolsulfonphthalein excretion before treatment were within the same range on completion of therapy. Electrocardiographic changes were not encountered in any of the 50 patients who were tested. There was no alteration in urinary observations. The skin did not show evidence of untoward arsenic effects in any patient.

There was no appreciable difference in antiamebic response between the different dose levels of the two thioarsenites employed. Since the smaller dosage, 3.0 Gm. over ten days, was as effective as the largest dose, 7.2 Gm. over twenty-four days, smaller amounts will be employed in future studies. It would appear that the laboratory evidence, both in vitro and in vivo, in naturally infected monkeys was confirmed and that dose levels from one-tenth to one-fifth those required for carbarsone U. S. P. were effective in human beings. Likewise, enteric coated tablets, which permit passage of the thioarsenites through the stomach without facilitating acid hydrolysis, will provide a useful form, especially for ambulatory patients. Finally, since there was no appreciable difference in response of patients harboring motile forms or amebic cysts, it would appear that these drugs are equally effective against both. It would appear, also, that since the liver and tissues of the bowels play a large part in the distribution of the thioarsenites in the animal body, effective drug levels can be developed where needed.

### THIOARSENITES AGAINST OTHER PARASITES

During clinical trials for antiamebic response, the two thioarsenites were employed in patients harboring other parasites. The same diagnostic procedures and controls were used and the dose in each case was similar, namely, 200 mg. by mouth three times daily for ten days. Of 12 persons with Strongyloides stercoralis who were treated, the condition in only 1 was cleared. Two other Costa Ricans harboring Bal. coli, both of whom had dysentery, were cleared of this ciliate (included in tables 4 and 5). A 10 year old Costa Rican boy infected with Fasciola hepatica was not benefited by thioarsenite medication. Two others with the cutaneous lesions of Leishmania tropica and 3 other Costa Ricans with dermal manifestation of yaws due to Treponema pertenue, were not benefited by oral use of the thioarsenites. All 20 patients (14 given C. C. 914 and 6 given C. C. 1037) had post-therapy examinations of urine and blood. The results of tests of hepatic and renal function indicated no impairment. Increases in hemoglobin levels, improved nutrition and increases in body weights occurred, in part because of better care in the hospital. No evidence of toxicity due to drugs was observed.

### SUMMARY

One hundred patients harboring Endameba histolytica and other parasites in Memphis, Tenn., and San José, Costa Rica, were treated with either *p*-carbamidophenyl-bis (carboxymethylmercapto) arsine (C. C. 914) or *p*-carbamidophenyl-bis (2-carboxyphenylmercapto) arsine (C. C. 1037). These agents, in previous laboratory studies, proved approximately ten times more effective than carbarsone U. S. P. in both in vitro and in vivo tests (in naturally infected macaques).

Of 82 patients, 77 with E. histolytica, 3 with Dientameba fragilis and 2 with Balantidium coli, 74 were cleared of their parasites over a four month follow-up period. Eighteen others, infected with Dientameba fragilis (2), Strongyloides stercoralis (12), Fasciola hepatica (1), Leishmania tropica (2) and Treponema pertenue (3) had no significant benefit following thioarsenite therapy.

Complete clinical appraisal before, during and after therapy, including tests of urine, blood and hepatic, renal and heart functions, revealed no drug toxicity due to the dose levels employed (3.0 Gm. orally in ten days to 7.2 Gm. in twenty-four days). In addition, 13 of these patients with acute dysentery also received C. C. 1037 in retention enemas (3.0 to 6.0 Gm. in six days) with benefit and without evidence of drug toxicity to mucous membranes of the lower bowel as revealed by proctoscopic examination. No cutaneous reaction or damage to other tissues was observed. Twelve patients exhibited nausea or vomiting after 200 mg. doses of either thioarsenite. Coating of the tablets with phenyl salicylate permitted completion of therapy in all but 1 of these patients.

Three Costa Rican patients with hepatitis, who had evidence of sulfobromophthalein sodium retention (5 to 20 per cent) at 45 minutes (before therapy) were cleared of amebas, and their hepatic function returned to normal. One of these also required emetine hydrochloride, 0.5 Gm. given parenterally over five days. Bismuth subcarbonate was also given to 2 other patients with long-standing dysentery.

Since earlier laboratory experience was confirmed, i. e., the thioarsenites are tolerated and effective in dose levels from one-tenth to one-fifth those of carbarsone, it is suggested that enteric-coated tablets of 25 to 50 mg. be employed orally, on a three times daily dose schedule over ten days. The thioarsenites in retention enemas may also be required in patients with severe dysentery.

It would appear, on the basis of laboratory and clinical trials, that the detoxication of carbarsone oxide (*p*-carbamidophenylarsenous oxide) by substituted sulfhydril groups has permitted the use of active trivalent analogues of carbarsone U. S. P. with greater distribution of an active agent to tissues, such as the liver and intestinal tract, where amebic invasion occurs.

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# TRAINING FOR CHILDBIRTH

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In the foreword to Helen Heardman's recent book, "A Way to Natural Childbirth," Dr. F. J. Browne, professor of obstetrics at the University of London, writes: "Nothing has been more remarkable in the practice of obstetrics within the last ten years than the increasing appreciation of the value of principles enunciated by Edmund Jacobson in 1929 in his book 'Progressive Relaxation' and afterwards applied to midwifery by Grantly Dick Read in his two books, 'Natural Childbirth' and 'Revelations of Childbirth.'"

In considering the recommendations of those who advocate the use of procedures aimed at physiologic, or "natural," childbirth one should understand that the technics suggested are concerned with more than parturition itself. In its broad application it represents an attempt on the part of those who care for pregnant and parturient women to gain further understanding of the physiology of pregnancy and labor, including its emotional aspects, so that these functions may be viewed with better understanding and less apprehension by patients and greater skill may be developed by those who attend them.

Certain misconceptions exist which, in most instances, are concerned with pain and anesthesia, the impression being that the procedures recommended render labor painless and that anesthetics are not used. None of the proponents of these technics has suggested that labor should be conducted without anesthetic aids or that it can be made devoid of pain. In a report of 100 consecutive deliveries by Dick Read[1] in 1947, drugs and analgesia were used in 42 per cent of cases. It is our observation that with the regimen which we use the reaction to pain has been greatly lessened in most patients; however, analgesics and anesthetics are never withheld when their use is indicated, and they are usually administered whenever the patient desires them.

The effect of emotions, especially anxiety and fear, on the woman in labor has been recognized for a long time and is no recent discovery. S. C. Busey[2] in 1888 ("American System of Obstetrics") stated, "The manifestations of suffering are more influenced by mental and emotional than the physical conditions. Delicate and feeble women often pass through the travail of labor with composure and heroism, whilst the robust and healthy often exhibit their suffering in the most exaggerated manner. . . . Women in labor are very impressible and quick to observe and wrongly interpret even trivial indiscretions of word and act. The confidence of the patient in the qualifications of her attendant obviates many emotional disturbances, conduces to the harmonious succession of the physiological phenomena."

In view of the vast amount of effort expended on health education in general, it is surprising how little has been done to educate women for childbirth. Many of the books which have been written for the expectant mother are chiefly concerned with the hygiene of pregnancy and prenatal care; they do not emphasize or delineate the role of the patient as an active participant in delivery. Furthermore, but little attempt is made to allay the traditional fear with which most women approach childbirth. Helen Heardman,[3] whose personal contribution in 1947 was indispensable to the regimen now established in our clinic, in her recent book asks: "How is it that we have allowed women whose function is the reproduction of the race by muscular effort to embark upon the heavy muscular effort of labour without even a second of real training—and in FEAR?"

It is unfortunately true that many of those who attend women in childbirth tend to be preoccupied with the physical welfare of the patient and her infant, paying but little attention to the emotions of the patient, the idea being presumably that the less she knows about her own physiologic makeup the better.

## THE EDUCATIONAL PROGRAM

The important part played by emotion in increasing the sensitiveness of women to pain in labor has been emphasized by Grantly Dick Read, who points out that education of women for childbirth can serve a twofold purpose, that of allaying fear and that of preparing the patient to perform her part in the labor process.

The educational program which has been developed in our clinic is dual in its nature. First, the patient, attending small classes, is instructed in the anatomy and physiology of pregnancy and labor. Second, the patient is trained in the use of her body to aid the natural forces of labor. In this the use of certain muscle groups is learned and the art of (muscular) relaxation practiced. Women who have been educated in this manner also have aid in putting the training into practice during labor by experienced attendants who have sympathy toward the plan. This reinforcement is referred to as "support" and is given by both nurses and physicians. In England the specially trained physical therapist is used for a considerable part of such support.

Our interest in this subject began in 1947 when several patients, having read the book "Childbirth Without Fear" by Dick Read, expressed a desire to experience natural childbirth. The results obtained by most of these women were such that members of the professional and nursing staff became convinced that the subject demanded consideration. In June 1947 we began a special program of study and selected every third patient who registered in our clinic as a member of a group to which certain physiotherapeutic and educational technics were applied to supplement the usual antepartum program. Through the generosity

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From the Department of Obstetrics and Gynecology, Yale University School of Medicine.

[1] Dick Read, G.: An Outline of the Conduct of Physiological Labor, Am. J. Obst. & Gynec. 54:702, 1947.

[2] Busey, S. C.: American System of Obstetrics, New York, W. Wood & Company, 1888, p. 486.

[3] Heardman, H.: A Way to Natural Childbirth, Baltimore, Williams & Wilkins Company, 1948.

of the Maternity Center Association of New York City, we received valuable assistance from Mrs. Helen Heardman, of England, a physical therapist who has had an extended experience working with pregnant and parturient women. Under her guidance our staff learned the exercises which are now taught in the nurses' classes for prospective mothers. The interest of the association was further shown by its generous support of three fellows, a physician and two nurses, who are now engaged in a study of the subject. Our first report appeared in November 1948[4] and dealt with our experience with 156 patients—93 primiparas and 63 multiparas. In conclusion we stated that "natural childbirth is a definite entity which can be taught successfully in a teaching ward service. We believe that natural childbirth technics offer decided advantages to mother and child, and are psychologically desirable for most women." In keeping with this latter statement it was decided on Aug. 1, 1948, to add to the routine prenatal program of all ward and staff private patients the physiotherapeutic and educational technics of the natural childbirth program.

This program at present consists of one lecture and two exercise classes given in early pregnancy and one lecture and two exercise classes given in the last half of the third trimester. At the first lecture, which is given by a physician to a group of 10 to 20 prospective mothers, the plan of education to be followed is outlined, emphasis being placed on the importance of a knowledge of the basic facts of pregnancy and labor. With the use of the Birth Atlas, anatomic charts and diagrams, the physiology and hygiene of normal pregnancy are discussed. At this time, also, the effect of anxiety and tension on physiologic functions is explained. At the conclusion of the class, which occupies forty-five minutes, questions are answered and group discussion often develops.

At the second lecture, also given by a physician when the women are four to six weeks before term, labor is discussed. The action of voluntary and involuntary muscles is explained, as are the stages of labor and the signs of beginning labor. The members of the group are told when to come to the hospital, the method of admission and the examination procedures which will follow on entrance to the ward. The patient's reaction to normal labor is discussed as well as the importance of the relaxation technics and the availability of anesthetic aids. Certain details of labor are explained, such as the purpose of rectal and vaginal examinations, artificial rupture of the membranes, episiotomy, the molding of the fetal head and the descent and propulsion of the fetus through the birth passage. The pathologic labor is not discussed except in answer to specific questions. An important purpose of the second lecture is to prepare the patient in advance so that she may know what to expect physically and emotionally, what her attendants expect her to do and how they may be expected to aid her.

The exercise classes are conducted by a nurse who is familiar with the lecture material and knows the simple exercise technics outlined in Mrs. Heardman's book. While the exercises are being taught and rehearsed, the lecture material is again presented and questions are answered. We have found that many women who may be hesitant to ask questions in the physician's classes feel more free to do so in those conducted by the nurse. A feature of the exercises is their simplicity, and this is important because the patient can fit them into her daily routine.

The exercises fall into two groups: (1) those that are aimed at increasing the tone and efficiency of the back, abdominal and perineal muscles and (2) those that promote physical relaxation, the latter finding their greatest application during labor. At the fourth and final class the procedure of admission to the hospital is again explained and the members of the group undergo a "rehearsal" of labor. At the conclusion of the class the group visits the obstetric division of the hospital. Here they meet the nursing personnel and are shown the labor and delivery rooms. They see the gas-oxygen apparatus, and use of the anesthesia mask is demonstrated.

### SUPPORT DURING LABOR

Many of our patients who have received the foregoing prenatal instructions go through a satisfactory labor with a minimum amount of support. Others may have difficulty in relaxation, may lose control and may experience a good deal of pain. Such patients, however, usually respond to the supportive technic used by the nurse or the physician. This consists in aiding the patient to put in practice the technics of relaxation that she has previously learned. It is an important part of our routine to see that no patient in active labor is left alone. Early in labor the husband or a student nurse may stay for a period with the patient.

If on admission the history and physical examination indicate that labor may be unduly prolonged, the administration of a sedative may give the patient a period of rest which will be of advantage. The relaxation technics are not instituted until the patient needs them. If relaxation becomes difficult in the first stage of labor with the cervix dilated to 4 to 6 cm., a small dose of an analgesic such as meperidine (demerol®) may be given with the suggestion that it will aid in relaxation. Our experience, which corresponds to that of others, has shown that the end of the first stage of labor is the most critical period from the standpoint of discomfort. We usually tell patients that when they pass into the second stage they will feel better. During the latter part of the first stage the lateral position which the patient has learned is often used. Massage or an icebag to the lower part of the back is helpful in relieving backache.

Bearing down efforts are not encouraged until the second stage is reached. Our experience has shown that the second stage is usually relatively rapid. During this stage gas and oxygen, self administered, are often desired. An anesthetist is present at the time of delivery for aid if a greater degree of anesthesia is desired. If episiotomy is performed, local procaine (novocain®) infiltration is used, the effect remaining during the time when suturing is done. In instances where low or outlet forceps become necessary, low spinal (saddle block) anesthesia is used because most of these patients desire to be conscious at delivery. Patients are delivered in the lithotomy position, but the legs are not placed in stirrups until the last moments.

### RESULTS

In our first report we attempted to judge our results by separating the patients into groups according to the use or nonuse of anesthetic aids during labor. Under this arbitrary plan we listed patients as excellent, good, fair or poor. The analysis showed that 126 of 156 patients, or 80.7 per cent, were in the first two categories. At present we have abandoned such rating, avoiding terms which might connote success or failure but surveying our results in monthly conferences at which both nurses and physicians attend. In a survey of our present program certain facts appear to be of interest. In the total number of deliveries (546) there were 485 anterior occiput positions, 41 occiput posteriors and 20 breech positions. The operative incidence in each category is shown in table 1.

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[4] Goodrich, F. W., and Thoms, H.: A Clinical Study of Natural Childbirth, Am. J. Obst. & Gynec. 56: 875, 1948.

Table 1.—*Operative Incidence in Each Presentation Category*

| Presentation | Spontaneous | Operative | Operative Incidence |
|---|---|---|---|
| Occiput anterior | 457 | 28 | 6.1% |
| Occiput posterior | 29 | 12 | 29.2% |
| Breech | 14 | 6 | 30.0% |

Table 2.—*Use of Analgesia in Five Hundred Spontaneous Deliveries (First Stage)*

| | Primigravida | | Multigravida | |
|---|---|---|---|---|
| | No. | % | No. | % |
| None | 90 | 45.0 | 211 | 70.3 |
| + | 79 | 39.5 | 69 | 23.0 |
| ++ | 23 | 11.5 | 16 | 5.3 |
| +++ | 8 | 4.0 | 4 | 1.3 |

Key: +, one dose of one agent or two doses of meperidine hydrochloride, not to exceed 125 mg. in all; ++, one dose of two different agents or two doses of one agent (if meperidine, this exceeds 125 mg.); +++, any medication greater than ++.

Table 3.—*Use of Anesthesia in Five Hundred Spontaneous Deliveries (Second Stage)*

| | Primigravida | | Multigravida | |
|---|---|---|---|---|
| | No. | % | No. | % |
| None | 114 | 57.0 | 137 | 45.6 |
| + | 64 | 32.0 | 145 | 48.3 |
| ++ | 16 | 8.0 | 8 | 2.6 |
| +++ | 6 | 3.0 | 10 | 3.3 |

Key: +, inhalation of nitrogen monoxide (50 per cent) intermittently with contractions only; ++, continuous nitrogen monoxide with patient semiconscious at delivery, or pudendal block; +++, continuous inhalation anesthesia with patient unconscious at delivery.

Table 4.—*State of Consciousness of Five Hundred Patients at Delivery*

| | Fully Conscious | | Semiconscious | | Unconscious | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| Primigravida | 178 | 89.0 | 16 | 8.0 | 6 | 3.0 |
| Multigravida | 282 | 94.0 | 8 | 2.6 | 10 | 3.3 |
| Total | 460 | 92.0 | 24 | 4.8 | 16 | 3.2 |

Although it is our definite opinion that attendance at classes plays an important role in the final outcome of the labor and delivery, this is difficult to prove statistically. The classes are not compulsory, and, although all the mothers are urged to attend the classes, not all of them do so. In the 546 patients under study it was found that 109 (27.5 per cent) attended no classes whatsoever. Only 97 (17.8 per cent) attended all six classes. The rest of the patients attended varying numbers of classes. When the mother's reaction to her experience was assessed, it was found that 21.3 per cent of the mothers attending no classes had poor reactions to the delivery, while of those mothers attending all classes only 5.2 per cent had a reaction to labor and delivery which was classified as poor. The over-all rate of "failure" was 14.1 per cent. That the attention which is given the patient during labor is the most important part of the program is attested by the "success" rate in those patients who have never attended any classes. Even though a patient has not registered in a prenatal clinic and has received neither antepartum care nor instruction, she often undergoes labor and delivery with no medication, or a minimum, if she is given the proper support.

At the present writing our series consists of 546 vaginal deliveries in patients all of whom were *given* the opportunity to attend classes. We selected the first 156 patients in the series by choosing every third patient in order of registration at the clinic. The *remainder represent consecutive deliveries starting* at the time when the opportunity to attend classes was extended to all patients.

In this series the operative deliveries numbered 46 (37 primigravida, 7 multigravida), an operative incidence of 8.4 per cent. Spontaneous deliveries numbered 500 (200 primigravida, 300 multigravida). The incidence of the use of analgesia and anesthesia in these 500 spontaneous deliveries is depicted in tables 2 and 3. Table 4 shows the state of consciousness of 500 patients at delivery.

## SUMMARY

In recapitulating our experience we feel justified in making these statements:

1. An educational program incorporating physical training for prospective mothers has important advantages during pregnancy and labor.

2. Not only does a better understanding by the patient of the physiologic process of pregnancy and labor, which may be gained by instruction from physicians and nurses, reduce anxiety by increasing the confidence of the patient, but the use of physical therapy technics definitely aids in the muscular effort of labor.

3. We do not consider that the program which we have established is fundamentally new; we view it rather as an attempt to emphasize and bring into practical use certain aspects of present day knowledge of the psychology and physiology of pregnancy and childbirth.

4. Objections have been raised against such a program, to the effect that it is impractical because of the time that physicians and nurses must devote to it. We do not consider this criticism valid, because the use of the class method of instruction actually takes but little increased time. As far as attention in labor is concerned, it is our opinion that patients in active labor should not be left alone with any regimen.

5. We recognize that fear and anxiety play a large part in the creation of tension, which has undesirable effects, but we do not place undue emphasis on this aspect. We prefer to think of our program in a broad sense as being directed toward childbirth with understanding and support rather than toward childbirth without fear.

# A VENOUS SHUNT FOR ADVANCED MITRAL STENOSIS

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We are recording in this report a newly devised operative procedure for the relief of acute pulmonary edema secondary to advanced mitral stenosis in which an outlet from the high pressure pulmonary area into the systemic venous bed has been created by an extracardiac shunt. This operation has now been undertaken in 5 patients. Its rationale, indications and limitations are presented herewith.

## THE PULMONARY SYNDROME OF MITRAL STENOSIS

In the evolution of rheumatic heart disease mitral stenosis ultimately develops in the majority of cases. In approximately 10 per cent a so-called "pure" form is the end result.[1] Many of these patients are able to lead comfortable and often active lives. They are frequently unaware of the cardiac abnormality until it is discovered accidentally or is revealed by characteristic complications. However, a considerable number with higher degrees of stenosis are subject to an alarming and distinctive syndrome, manifested primarily by acute pulmonary edema (fig. 1). This usually occurs at night and is often accompanied by hemoptysis. Seldom is the initial attack fatal, but recurring episodes of edema ultimately drown half the patients in this group.

This syndrome is most common in young women in the third decade. It is particularly troublesome at the time of the menses and is often brought to light by pregnancy. Infections, fever and tachycardia are poorly tolerated. Between attacks, however, these patients may be relatively well and under ordinary circumstances are remarkably free of symptoms. The heart is often only slightly enlarged in spite of tight mitral stenosis, and normal sinus rhythm is the rule.

A simple diagram illustrates the structural alterations that are present (fig. 2). Over a period of years pressure builds up in the left auricle and the pulmonary circuit behind the obstructed mitral orifice. This is reflected backward with characteristic changes in the lungs[2] and in time leads to hypertrophy of the right ventricle. Herein lies one of the ultimate difficulties: under conditions of stress, tachycardia and increased blood volume the augmented activity of the strong right ventricle floods the lungs, whose outlet is fixed by the narrowed mitral orifice. Under these circumstances pulmonary edema and hemorrhage are inevitable. Undoubtedly neurogenic and other less well understood factors influence and modify this pulmonary reaction. Nevertheless, it is an acute increment in the already excessive pulmonary pressure which is primarily responsible for this vascular crisis in the lungs. These patients succumb to pulmonary failure and not to cardiac failure. They die before their time, as far as their hearts are concerned. In fact, the heart is too good. It is therefore understandable why medical measures (digitalis, diuretics and diets), although helpful, are ultimately ineffective in dealing with this clinical paradox.

During the past fifteen years the problem presented by this group of patients has been given special consideration in connection with a long term study of rheumatic heart disease at the House of the Good Samaritan.[3] Through this period there has been no reason to be enthusiastic about a direct surgical attack on the valve itself. The experience of Cutler and associates twenty-five years ago was disappointing. Only 1 of their original 4 patients survived the procedure, and this survivor succumbed four years later with cardiac insufficiency.[4] Three subsequent attempts likewise ended fatally within a few hours of operation.[5] Sporadic interest by others in subsequent years has added little to the previously unfavorable experience. Recently and with improved technic Harken and associates[6] have had more promising results. Nevertheless, under present conditions the direct surgical approach involves a destructive procedure within the heart. It must of necessity carry a considerable risk, in addition to the debatable advantage of introducing with current technic an undesirable element of insufficiency to compensate for a predominantly stenotic valve. Furthermore, Harken noted at the time of operation an actual increase in the left auricular pressure following valvulotomy. It may be that factors other than the fenestrated valve were responsible for this undesirable increase in pressure. For the foregoing reasons and until with continuing research in that direction a more constructive type of operation in terms of valvular function becomes available, it seems best to seek relief for these patients by a less hazardous route. There are clues which suggest that help may be available outside the heart itself.

## COMPENSATORY ALTERATIONS IN MITRAL STENOSIS

In this connection a group of patients with a combination of mitral stenosis and atrial septal defect (Lutembacher's syndrome[7]) has been studied. In 1941 Bedford, Papp and Parkinson[8] recorded their observations in a similar group. These patients illustrate features which have a direct bearing on the present problem. First, even in the presence of high grade mitral stenosis they are not subject to acute pulmonary edema (or hemoptysis). The lungs are protected by the escape of blood backward through the atrial opening. This in turn places an extra burden on the right chambers of the heart in blood volume but at a lower pressure. These patients ultimately succumb to right-sided cardiac insufficiency but not to pulmonary congestion. Second, auricular fibrillation tends to occur at a later age in this group than is to be expected in patients with comparable degrees of mitral stenosis, suggesting an element of protection to the left auricle. Finally, the occurrence of mitral stenosis in such a high percentage (40 per cent) of patients wtih atrial septal defects suggests that the latter may develop from minor degrees of patency (present in perhaps 25 per cent of normal hearts) as a protective measure against the mounting pressure in the left auricle. Reasoning

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From the Massachusetts General Hospital.

[1] Walsh, B. J.; Bland, E. F., and Jones, T. D.: Pure Mitral Stenosis in Young Persons, Arch. Int. Med. **65**: 321 (Feb.) 1940.

[2] Parker, F. Jr., and Weiss, S.: Nature and Significance of Structural Changes in Lungs in Mitral Stenosis, Am. J. Path. **12**: 573, 1936.

[3] Jones, T. D., and Bland, E. F.: Rheumatic Fever and Heart Disease: Completed Ten Year Observations on One Thousand Patients, Tr. A. Am. Physicians **67**:267, 1942.

[4] Cutler, E. C., and Levine, S. A.: Cardiotomy and Valvulotomy for Mitral Stenosis, Boston M. & S. J. **188**: 1023, 1923.

[5] Cutler, E. C., and Beck, C. S.: Present Status of Surgical Procedures in Chronic Valvular Disease of Heart: Final Report of All Surgical Cases, Arch. Surg. **18**: 403, 1929.

[6] Harken, D. E.; Ellis, L. B.; Ware, P. F., and Norman, L. R.: The Surgical Treatment of Mitral Stenosis: I. Valvuloplasty, New England J. Med. **239**: 801, 1948.

[7] Lutembacher, R.: De la sténose mitrale avec communication interauriculaire, Arch. d. mal. du cœur **9**: 237, 1916.

[8] Bedford, D. E.; Papp, C., and Parkinson, J.: Atrial Septal Defect, Brit. Heart J. **3**: 37, 1941.

along these lines, Jarotsky in 1927[9] proposed a surgically created defect as a possible solution, as did O'Farrell in 1938.[10] Recently Harken[6] has adopted their suggestion.

A further clue in a somewhat different direction is presented by the remarkably dilated bronchial veins in patients with longstanding mitral stenosis—an attempt by nature to provide an outlet from the congested pulmonary bed into the systemic veins.[11] It is of further interest that in those whose pulmonary syndrome is characterized by massive hemorrhage from these dilated varices (on occasion up to 500 cc.) the accompanying edema is often strikingly relieved or actually aborted.

Three years ago, with these facts in mind, it was decided that a vent from the high pressure area of the left auricle or adjacent pulmonary veins into a systemic vein might offer a solution to the problem. An extracardiac shunt seemed to be less hazardous than an intracardiac septal defect. Furthermore, if later the additional burden which might be placed on the right auricle and ventricle seemed excessive, the shunt could be closed with little added risk to the patient. It was finally decided that such a shunt could be created with relative ease and safety by making an anastomosis between the dorsal segment branch of the right inferior pulmonary vein and the azygos vein.

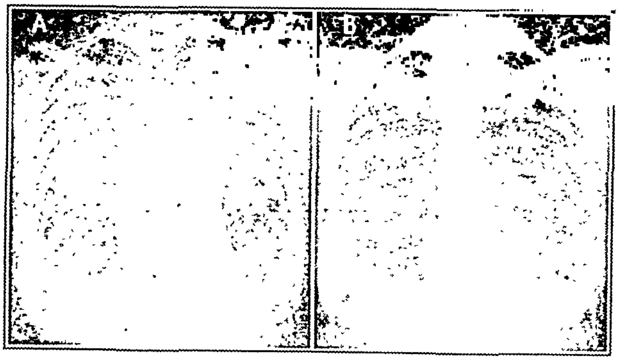

Fig. 1.—Acute and near fatal pulmonary edema in a woman aged 24, with advanced mitral stenosis but with little or no cardiac enlargement (slight fulness of the pulmonary conus and left auricle). *A*, roentgenogram on entry showing extensive edema of the lungs with characteristic butterfly distribution; *B*, roentgenogram three days later after rapid subsidence of the edema.

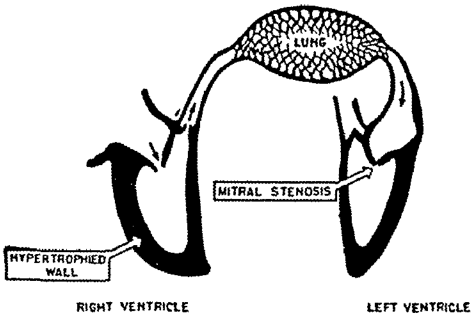

Fig. 2.—A diagram of the structural alterations responsible for the acute pulmonary syndrome (edema and hemorrhage) in patients with advanced mitral stenosis.

After two more years of deliberation and study a patient of an optimal age, under our care for nine months at the House of the Good Samaritan, was selected as a suitable candidate for the operation. It was evident that medical measures had been unsuccessful and that she was in urgent need of help in order to survive.

REPORT OF CASES

Case 1.—*History.*—Mrs. O. C. B., a Negro woman aged 17, had rheumatic fever at the age of 5 years but was well thereafter. At 14 years of age, during a routine examination, a murmur was discovered and subsequently the diagnosis of mitral stenosis was confirmed at another hospital. At the age of 15 she had the first of a series of increasingly severe attacks of pulmonary edema (cough, orthopnea, wheezing and scant blood-tinged sputum). They were most bothersome at the time of her menses. During one of these attacks she was taken to another hospital in a moribund state and spent four days in an oxygen tent. Between the acute attacks her dyspnea had slowly increased to such a degree that she curtailed her activity and gave up school. In 1947 she was admitted for study to the House of the Good Samaritan, where she had several minor episodes of pulmonary congestion in spite of a regimen that included digitalis, low sodium diet and diuretics. It was evident that her balance was precarious and her future unfavorable. Even to undertake cardiac catheterization seemed too hazardous. She was transferred in March 1948 to the Massachusetts General Hospital for surgical relief.

Her general condition was good. The heart was only slightly enlarged (fig. 3). The rhythm was regular. There were characteristic signs of extreme mitral stenosis—a loud crescendo grade 4 apical diastolic murmur ending in the shock of a loud first sound. There were no other murmurs. The pulmonary second sound was accentuated in accord with the patient's pulmonary hypertension. The blood pressure was 120 mm. of mercury systolic and 80 mm. diastolic. There was no evidence, past or present, of right-sided cardiac insufficiency. Her electrocardiogram showed slight right axis deviation. After careful preparation of the patient with a strict low sodium regimen, digitalis and diuretics, and under the protection of quinidine, an exploratory operation was performed March 23, 1948.

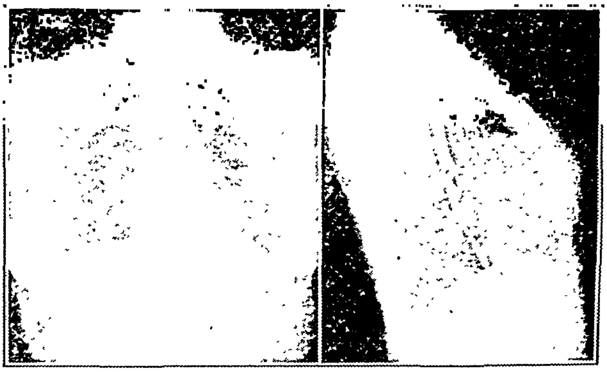

Fig. 3. (case 1).—Roentgenograms of the chest before operation. There is slight enlargement of the heart with prominence of the pulmonary conus and left auricle characteristic of mitral stenosis.

*Operation.*—A right thoracotomy incision was made intercostally through the sixth interspace. The lung was not adherent, but it presented an unusual appearance. The lung was of a peculiar dusky color and seemed to be congested and unusually firm. The inferior pulmonary vein was exposed through a short incision in the mediastinal pleura, and the dorsal segment branch was dissected out. It appeared to be unusually short, and for a brief period of time it seemed as though it could not be used. However, by dividing some of its smaller branches further into the hilum of the lung it was possible to gain about 1 cm. in length. The azygos vein was rather unusual in that it arose from the inferior portion of the chest, crossing to the left side at about the middle of the chest and then back again to the right to arch up over the

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[9] Jarotzky, A.: Zur Frage der Operation im Innern des Herzens bei Stenosis mitralis, Zentralbl. f. Chir. **53**: 140, 1926.

[10] O'Farrell, P. T.: The Clinical Diagnosis of Congenital Heart Disease, Irish J. M. Sc. **153**: 608, 1938.

[11] Ferguson, F. C.; Kobilak, R. E., and Dietrick, J. E.: Varices of Bronchial Veins as Source of Hemoptysis in Mitral Stenosis, Am. Heart J. **28**: 445, 1944.

hilum and enter the superior vena cava in the normal fashion. The central portion of the azygos vein was freed and the intercostal and other small branches were ligated with fine silk. The diameter of the azygos was slightly smaller than that of the superior segment branch of the inferior pulmonary vein, but the disparity was not great.

Before the pulmonary vein was divided a pressure reading from within the left auricle was determined by means of a fine needle attached to a manometer. It was 460 mm. of water (normal, about 100 mm.). The pulmonary vein branch to be used for the anastomosis was then occluded as close as possible to its connection with the main vein, and it was cut across as far out into the pulmonary substance as possible. The distal or cardiac end which was thus secured for anastomosis was then passed over the turned-back end of the upper portion of the azygos vein, which had been cuffed back over a vitallium® (Blakemore) tube 4 mm. in diameter.[12] The two were then tied together over the tube by the usual technic, using heavy deknatel® ligatures. The occluding clamp on the azygos vein was then removed. The lung tourniquet which had been used to occlude the pulmonary vein was then taken off, and a column of blood rushed through from the high tension pulmonary vein into the azygos vein with great force. The functioning of the shunt was observed for a period of ten minutes while preparations for closing the wound were made, and at the end of that time the blood was still passing through at a rapid rate. After the lung was expanded, the chest wall was closed using pericostal sutures of surgical gut with silk for the remaining layers. A diagram (fig. 4) illustrates the anastomosis.

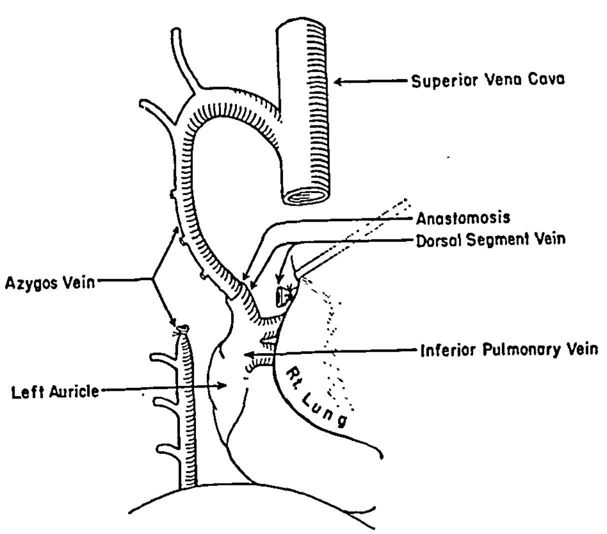

Fig. 4.—A diagram of the pulmonary-azygos shunt viewed from the right side. The lungs have been retracted forward. Oxygenated blood from the high pressure pulmonary vein—left auricle area—escapes backward through the shunt to the low pressure systemic bed distending the azygos vein throughout its course to its juncture with the superior vena cava.

*Subsequent Course.*—The patient stood the two and one-half hour procedure well. There was no pulmonary congestion (fig. 5). On the third day she was ambulatory, and on the tenth day she was presented at Medical Grand Rounds.[13] At the time of writing a year has elapsed.

On August 1948, after a moderately active summer, she entered the Emergency Ward acutely ill with severe pelvic cramps, vaginal discharge, temperature of 103 F. and tachycardia of 130. A pregnancy test was positive. With penicillin therapy the fever subsided, but because of continued cramps and vaginal discharge a dilatation and curettage was performed. Chorionic villi were identified. Sterilization was refused. She made a good recovery, and her lungs remained dry throughout this illness.

In January 1949 she was readmitted with severe nausea, vomiting, pelvic cramps and vaginal discharge. A pregnancy test was again positive. In spite of her improvement since March 1948, a dilatation and curettage again seemed best.

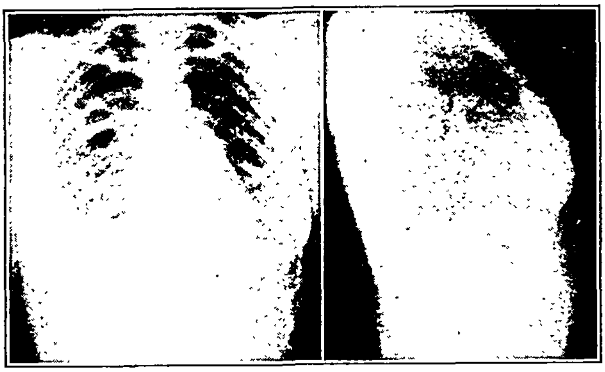

Fig. 5 (case 1).—Roentgenograms of the chest ten days after operation. The vitallium® tube at the site of anastomosis is visible behind the heart at the hilum of the right lung. The lungs are clear, but a small amount of fluid remains at the base of the right lung as a postoperative reaction. It subsided in another week.

She has been well since, but the present plan is to let the next pregnancy take its course under close supervision.

*Comment.*—During the year which has elapsed since operation this patient's course has been remarkable in that she has escaped pulmonary edema in spite of unreasonable activities, a serious infection and two pelvic operations. Considering her precarious state during the previous two years, it appears that the pulmonary-azygos shunt has protected her lungs.

Case 2.—*History.*—M. Z., a man aged 27, entered the hospital in July 1948 because of recurring pulmonary edema. Rheumatic heart disease had been discovered in a routine examination when he was 17 years of age. During subsequent years he was well and active. In 1945 he had the first of a succession of severe episodes of pulmonary congestion. During the two years before entry he had approximately twenty such attacks, characterized by acute severe dyspnea, wheezing and frothy blood-tinged sputum. The majority were precipitated by physical exertion or emotional upsets and occasionally by infection. Since January 1948 the attacks had been more frequent and on several occasions his survival seemed unlikely. In May auricular fibrillation ensued, and in spite of vigorous therapy his condition remained precarious.

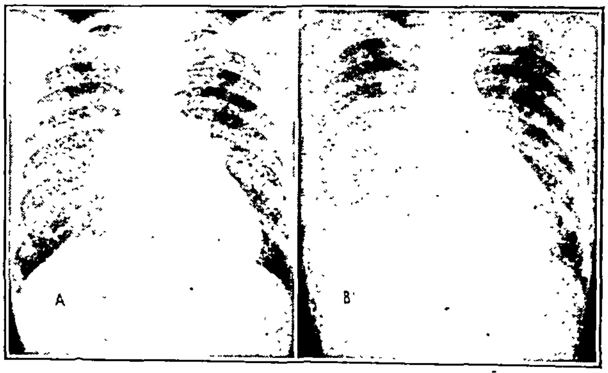

Fig. 6 (case 2).—Roentgenogram (*A*) of the chest before operation at a time when the patient was free of active congestion. The heart is considerably enlarged with prominence of the pulmonary conus and left auricle. In addition to the increased vascularity of the pulmonary roots there are miliary densities characteristic of hemosiderosis widely scattered throughout the lungs. Roentgenogram (*B*) six weeks after operation.

On entry (July 4, 1948) he was recovering from his most recent attack of acute pulmonary edema, which had occurred four days previous. There was no congestion of the cervical veins or liver and no edema. The heart was moderately enlarged (fig. 6 *A*) and absolutely irregular with an apex rate of 120. There were a well defined apical diastolic roll (grade 4) and a slapping first sound characteristic of mitral stenosis. The pulmonary second sound was decidedly accentuated, and there was a grade 2 diastolic blow along the left sternal border (slight aortic regurgitation). The blood pressure was 120 mm. of mercury systolic and 70 mm. diastolic. There were residual rales at the base of both lungs.

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[12] Blakemore, A. H., and Lord, J. W. Jr.: A Nonsuture Method of Blood Vessel Anastomosis: Experimental and Clinical Study, J. A. M. A. **127**: 685 (March 24) 1945.

[13] A Venous Shunt for Marked Mitral Stenosis, Massachusetts General Hospital, Case 53, Am. Pract. **2**: 756, 1948.

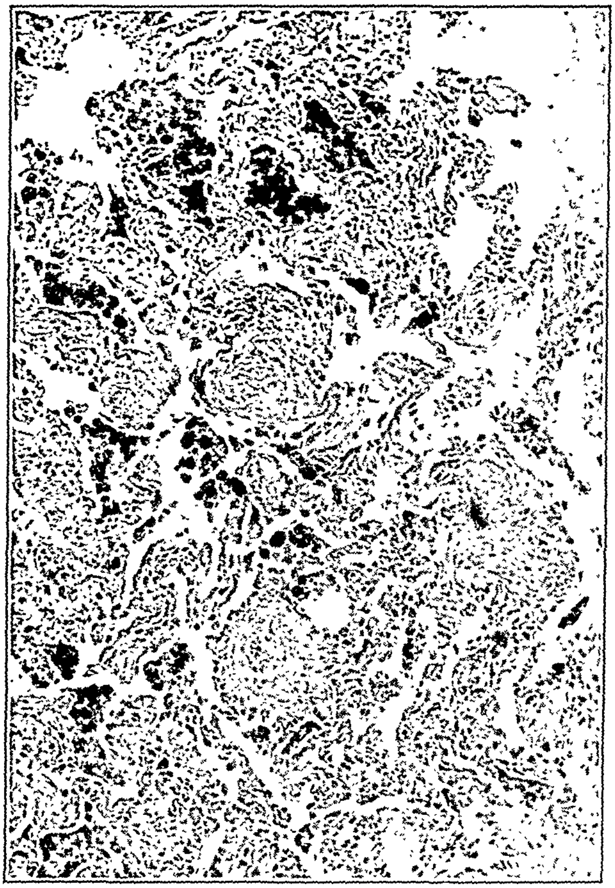

Fig. 7 (case 2).—Photomicrograph of a biopsy of the lung. The darkly stained areas are deposits of hemosiderin widely distributed throughout the section. The thickened walls of the small arteries and of the alveolar alveoli are evident. The lung is free of congestion.

He was maintained on a strict low sodium diet, digitoxin 0.3 to 0.4 mg. a day and mercurial diuretics every third day. On this regimen the apex rate receded to 80 to 90, his lungs cleared and he was again comfortable. His vital capacity was 2.8 liters. There was no clear evidence of active rheumatic fever.

In spite of these measures and without obvious cause, on July 11 he had acute pulmonary congestion, which cleared in twenty-four hours but recurred on July 15. On the evening of July 31 he again had acute severe pulmonary edema, and for the next twelve hours it seemed unlikely that he could survive. However, during the next three days his lungs cleared. There was no right-sided cardiac insufficiency. Thereafter he slowly improved, but two to three times a week he had milder episodes of nocturnal dyspnea and wheezing. His condition remained so precarious that he was unwilling to leave the hospital.

At first he was not considered as a candidate for surgical relief, chiefly because of the considerably enlarged heart and the presence of auricular fibrillation. However, it seemed evident to the family and to the consultants (Drs. Paul D. White and Samuel A. Levine) that he could not long survive these episodes of severe pulmonary congestion. In this situation the risk of operative intervention, although considerable, seemed less than that of recurring edema.

*Operation.*—On Oct. 24, 1948 the right lung was explored and the dorsal branch of the inferior pulmonary vein was anastomosed end to end with the azygos vein by means of a vitallium® tube 4 mm. in diameter. Although in this instance the azygos vein was relatively small, a good shunt was effected and a vigorous reflux of blood was observed from the tense and distended pulmonary vessel backward into the systemic vein. Direct pressure readings were not attempted in view of the precarious state of the patient.

*Subsequent Course.*—He stood the operation well but on the same afternoon had mild pulmonary congestion, which was promptly relieved by the aspiration of 800 cc. of air from the right pleural cavity. Thereafter he made a slow but satisfactory recovery. He was able to leave the hospital in a month. On Dec. 17, 1948 he returned and was shown at Medical Grand Rounds. His improvement had been remarkable in that he was leading a quietly active life which included shopping, cinema and the theater. There had been no nocturnal distress or wheezing, and he was much encouraged. In January he proceeded by train to the west coast. On Jan. 20, 1949 (three months postoperatively) Dr. W. P. Thompson in Los Angeles reported that he was in good condition and free from signs of congestion.

In February he returned east for a sojourn in Florida and subsequently journeyed to Chicago for a wedding and to Boston on March 14, 1949 for a follow-up examination. He has been entirely free of pulmonary congestion and his reserve has progressively improved. He states that on only two occasions (once in California and once in Florida) following unusual emotional excitement he had transient breathlessness for approximately ten minutes but without palpitation, cough or wheeze. The patient and his family insist that he is "75 per cent better than at any time during the past two years."

It is of interest that in this patient we suspected from the appearance of his roentgenogram (fig. 6) hemosiderosis of the lungs.[14] A small biopsy at the time of operation confirmed this suspicion (fig. 7).

*Comment.*—Surgical operation on this patient involved great risk. In the future it is unlikely that we shall attempt this surgical procedure in the presence of auricular fibrillation and cardiac enlargement of this degree, unless it is equally clear, as in this case, that recurring pulmonary edema is imminently threatening the patient's life. His improvement during the five months since operative intervention has been striking.

Case 3.—*History.*—Mrs. R. O., aged 24, had always been well, had no history of rheumatic fever or chorea and no knowledge that she had heart disease. Two years before admission (at the age of 22) when five months pregnant, she awoke at 3 o'clock in the morning with severe dyspnea and wheezing.

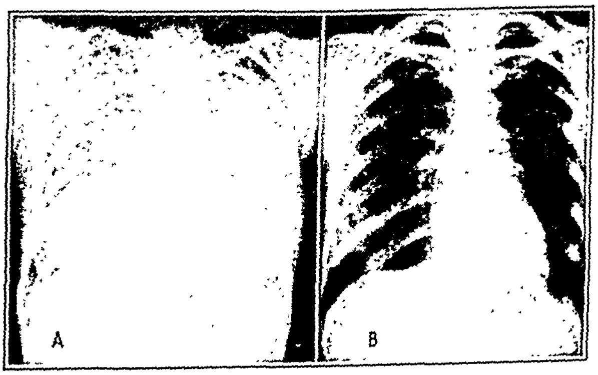

Fig. 8 (case 3).—*A*, roentgenogram during an attack of massive pulmonary edema ten months before operation; *B*, roentgenogram later, after complete recovery. In spite of tight mitral stenosis the heart is small with barely detectable alteration in contour.

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[14] Scott, R. D. W.; Park, S. D. S., and Sandrum, A. C.: The Clinical, Radiological, and Pathological Aspects of Pulmonary Hemosiderosis, Brit. J. Radiol. **20:** 100, 1947.

She was admitted to another hospital, where she remained for eight days, with slow recovery. She was delivered at the eighth month without difficulty and was well thereafter. While in swimming sixteen months before entry, she had severe dyspnea, coughed up several ounces of blood and required morphia for relief. During mild bronchitis ten months before entry she had a third attack of acute pulmonary edema and hemoptysis and required vigorous hospital treatment with diuretics and digitalis. A roentgenogram at that time showed massive pulmonary edema (fig. 8 *A*) and a relatively small heart. Thereafter she was fairly well until two months before entry when, while walking quietly on a hot day, she again had acute pulmonary edema and hemoptysis requiring hospital treatment. In October 1948 she was referred to us by Dr. J. H. Currens for consideration of surgical relief.

On entry she was rather thin but otherwise well. The heart action was forceful with a loud (grade 4) apical diastolic murmur ending with crescendo in a slapping first sound. There was an accompanying diastolic thrill. The pulmonary second sound was definitely accentuated. The blood pressure was 105 mm. of mercury systolic and 75 mm. diastolic. The roentgenogram disclosed that the heart (fig. 8 *B*) was only slightly enlarged in the region of the left auricle and pulmonary conus. The vascular root shadows were prominent. The vital capacity was 2.5 liters. An electrocardiogram showed normal rhythm, slight right axis deviation and prominent P waves.

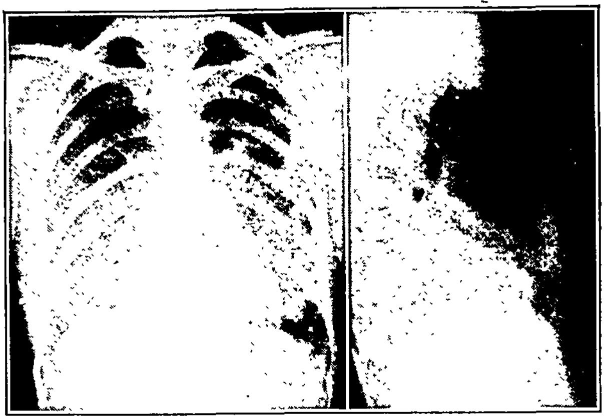

Fig. 9 (case 3).—Roentgenogram nine days after operation. The vitallium® tube is visible at the root of the right lung. Two metal clips placed at the junction of the azygos vein and superior vena cava as a guide for subsequent catheterization are faintly visible in both the anteroposterior and the lateral views.

Cardiac catheterization[15] revealed a pulmonary artery hypertension of 60 mm. of mercury systolic and 30 mm. diastolic. One minute of gentle exercise produced mild pulmonary distress and wheezing, and the pulmonary artery pressure mounted promptly to 75 mm. systolic and 36 mm. diastolic. In normal persons pressures in the pulmonary artery are approximately 25 to 28 mm. systolic and 0 to 5 mm. diastolic, and exercise is unaccompanied by a significant rise.[16]

*Operation.*—On Nov. 18, 1948 an operation was performed using a right intercostal incision. The lung presented the characteristic congested appearance of mitral stenosis. The azygos vein and dorsal segment branch of the inferior pulmonary vein were large so that an unusually satisfactory anastomosis could be made. A vitallium® tube 4 mm. in diameter was employed. After release of the clamps from the respective veins a large flow of blood could be seen and felt passing through the anastomosis into the azygos vein in the direction of the superior vena cava. A definite thrill could be felt along the azygos vein. Pressure measurements were obtained from inside the left auricle through a needle inserted at the base of the inferior pulmonary vein. The readings were 425 mm. of water with the shunt occluded and 390 mm. of water with the shunt open.

*Subsequent Course.*—The patient made an uncomplicated recovery. A chronic cough of several months' duration disappeared in three weeks. In January 1949 she returned for cardiac catheterization but was found to have a mild respiratory infection. There had been no further wheezing or hemoptysis, but further study was postponed until a later date.

Postoperative cardiac catheterization studies were made on Feb. 18, 1949. The most striking and encouraging observation in the preoperative and postoperative comparison was the ability of the patient to undergo two and one half minutes of exercise without distress with a maximal pulse rate of 95 and pulmonary artery pressures of 65 mm. of mercury systolic and 25 mm. diastolic, whereas before operation only one minute of the same exercise produced mild pulmonary congestion, with a pulse rate of 115 and pulmonary pressures of 75 mm. systolic and 36 mm. diastolic.

Studies of the oxygen content from three levels in the superior vena cava were disappointing, in that there was no significant difference as compared with preoperative determinations. Technical difficulties in obtaining well mixed samples at this level of the vascular tree are considerable. Much further study, both of pressure and oxygen content, will be necessary for objective evidence that the shunt is functioning and protecting the pulmonary circuit.

*Comment.*—In several respects this patient was considered the most suitable of the 3 because, despite definite pulmonary hypertension, her heart was small. At operation both the dorsal branch of the pulmonary vein and the azygos were large (the size of a lead pencil) and a good shunt was effected through a tube of 4 mm. bore. A prompt drop in left auricular pressure of 35 mm. of water was observed by direct measurement when the shunt was released. The entire length of azygos vein was overdistended by a forceful flow of blood sufficient to produce a thrill by direct palpation. Furthermore, studies in this case include both preoperative and postoperative catheterization of the right chambers of the heart and of the pulmonary artery. A comparison of the pulmonary pressure response to exercise before and after operation is favorable, but the oxygen content determinations are equivocal.

Case 4.—*History.*—Mrs. D. J. G., aged 42, had scarlet fever and mild arthritis at 14, but no evidence of heart disease then or during adolescence. At the age of 34, during pregnancy, she had two mild attacks of pulmonary congestion but no mention was made of her heart. At 38 years of age, after shoveling snow, she had acute pulmonary edema which lasted forty-five minutes. A physician at that time said that she had mitral stenosis. A year later (at the age of 39) she began to have recurring episodes of severe pulmonary edema, most often at the time of menses. She became increasingly dyspneic and wheezy on effort. Four months before entry she had severe pulmonary edema (with hemoptysis) for five hours and was barely rescued by vigorous hospital therapy. Three months before entry she had a similar severe attack. Two months before entry she again had pulmonary edema on two successive nights. In January 1949 she entered the hospital for a consideration of surgical relief.

She was of small stature and rather frail but otherwise well. There was no congestion. The heart was slightly enlarged, with a loud grade 4 crescendo diastolic murmur at the apex, with an accompanying thrill and with an accentuated pulmonary second sound—the characteristic observations of advanced mitral stenosis and pulmonary hypertension. In addition there was a soft grade 1 basal diastolic murmur (slight aortic regurgitation). The blood pressure was 110 mm. of mercury systolic and 70 mm. diastolic. The vital capacity was 2.2 liters. An electrocardiogram showed normal rhythm, moderate right axis deviation, and prominent P waves. A roentgenogram revealed slight cardiac enlargement (cardiothoracic ratio of 11/22 cm.), moderate prominence of the left auricle and of the pulmonary root shadows. Laboratory study and clinical observation revealed no evidence of active rheumatic infection.

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[15] Catheter studies in this and subsequent cases were made by a cardiac catheterization team consisting of Drs. Gordon S. Myers, J. Gordon Scannell and Stanley M. Wyman.

[16] Hickam, J. B., and Cargill, W. H.: Effect of Exercise on Cardiac Output and Pulmonary Arterial Pressure in Normal Persons and in Patients with Cardiovascular Disease and Pulmonary Emphysema, J. Clin. Investigation **27**: 10, 1948.

Cardiac catheterization revealed a pressure in the right pulmonary artery of 90 mm. of mercury systolic and 50 mm. diastolic. After fifteen minutes of good relaxation the pressures slowly receded to 48 mm. systolic and 10 mm. diastolic, the pulse rate remaining at 75 during both determinations. The cardiac output was 5.26 liters per minute. After two minutes of gentle exercise, the pulse rate increased to 100 and there was a prompt and well defined increase in pulmonary pressure to 105 mm. systolic and 45 mm. diastolic.

*Operation.*—On Jan. 31, 1949 a standard thoracotomy incision was made and the right pulmonary cavity was entered through the sixth intercostal space. The lungs presented the characteristic hue and consistency of mitral stenosis. The dorsal segment vein was easily exposed and seemed longer than usual. It was exceedingly tense from obviously increased pressure. Two small branches were ligated in order to free the main stem adequately. The azygos vein was dissected free. It was found to be somewhat smaller than in the preceding 3 cases, but a satisfactory anastomosis was effected by a vitallium® tube of 3 mm. bore. On release of the clamps there was the usual rush of blood through the anastomosis, distending the azygos vein throughout its course to the vena cava. A thrill was evident by direct palpation. A pressure determination from within the left auricle was 450 mm. of water with the opened shunt. A small biopsy of the lung was made.

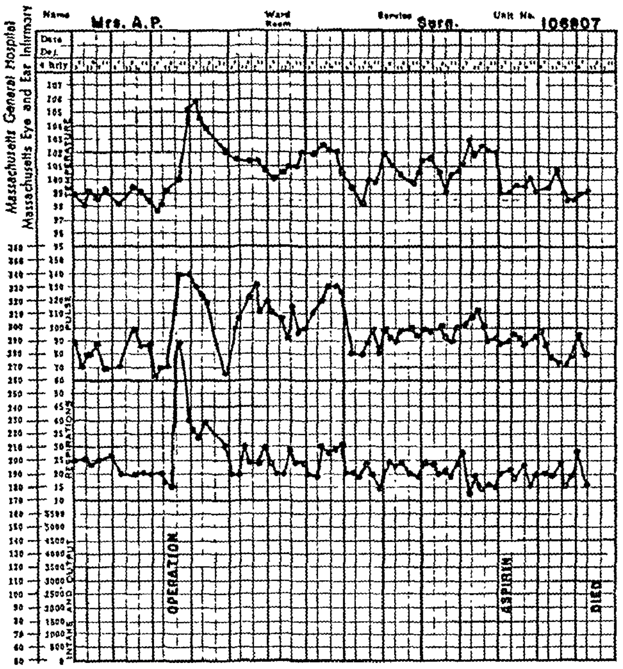

Fig. 10 (case 5).—Postoperative clinical chart showing the severe febrile reaction and subsequent course to death on the eleventh day from a recrudescence of rheumatic fever.

*Subsequent Course.*—The patient stood the two and one-half hour operation without difficulty. The lungs remained dry throughout the procedure. Two weeks later, as her activities were being increased, she had a pulmonary infarct at the base of the left lung. A bilateral superficial femoral vein ligation was performed, followed by dicumarol® therapy. She left the hospital four weeks after operation and has made a satisfactory convalescence.

*Comment.*—It is too early to appraise the results of the operative procedure in this patient. Her recovery has been slowed by the pulmonary infarct, but she weathered this complication without pulmonary edema. When she is fully stabilized, it is planned to study her further by cardiac catheterization.

Case 5.—*History.*—Mrs. A. P., aged 30, had chorea at the age of 12 years but without evident cardiac involvement. At the age of 15 an apical diastolic murmur was noted, but she continued active and free of symptoms. At the age of 25, during pregnancy, she had severe dyspnea and frequent hemoptysis. Her symptoms became so alarming that she was delivered in the sixth month by cesarean section at the Boston Lying-In Hospital. The child did not survive. At 26 years of age she had acute pulmonary edema after mounting one flight of stairs. Thereafter she had frequent minor spells of acute dyspnea, coughing and blood-tinged sputum on slight effort or excitement. Since then her activities had been appreciably limited in spite of digitalis, diuretics and a restricted salt diet; mounting three to four steps would cause minor pulmonary congestion. Because of her precarious state she was referred to the hospital for a consideration of surgical relief.

On entry she appeared in fair health. There was no congestion of the cervical veins, lungs or liver, and no edema. The heart was moderately enlarged, with the characteristic signs of advanced mitral stenosis and a loud pulmonary second sound. The blood pressure was 120 mm. of mercury systolic and 65 mm. diastolic. The vital capacity was 1.8 liters. The electrocardiogram showed normal rhythm, right axis deviation and prominent P waves. Roentgen examination confirmed the presence of moderate cardiac enlargement, chiefly in the region of the left auricle, and accentuated hilar vascular markings.

Laboratory studies revealed two factors suggestive of smouldering rheumatic activity; namely, a leukocytosis of 12 to 14 thousand and a corrected sedimentation rate of 1.2 mm. per minute. A venous pressure determination was normal.

Cardiac catheterization revealed extreme pulmonary hypertension actually in excess of the systemic blood pressure, namely, 130 mm. of mercury systolic and 40 mm. diastolic in the right pulmonary artery. Gentle exercise resulted in a prompt increase in pulmonary artery pressure to 145 mm. systolic and 65 mm. diastolic. The cardiac output was 4.6 liters per minute at rest and 4.2 liters per minute with exercise.

In view of the recurring pulmonary congestion and the extreme pulmonary hypertension, operation was undertaken in spite of the suspicious signs of rheumatic activity. In retrospect, more attention should have been directed to the latter feature.

*Operation.*—On Feb. 7, 1949 the chest was entered through the right sixth intercostal space. Unlike the previous cases, considerable difficulty from pulmonary congestion was encountered throughout the operation and the air passages required frequent clearing by suction. However, an excellent anastomosis was effected in the usual manner, employing a vitallium® tube 4 mm. in diameter. Direct measurement of the left intra-auricular pressure was 530 mm. of water, and after the shunt was released the pressure dropped to 370 mm. As usual, the azygos vein was greatly distended by the forceful reflux of blood, and a distinct thrill was evident by palpation.

*Subsequent Course.*—From onset the postoperative course was hectic and totally unlike that of any of the preceding 4 patients (fig. 10). There was an immediate and pronounced febrile reaction to 106 F. (by rectum), followed by a persistent fever, the cause of which was not evident until the eighth day when, by exclusion, rheumatic fever was suspected. On administration of acetylsalicylic acid there was a prompt response, but the patient continued to decline, with scant urinary output, mounting nonprotein nitrogen and a terminal paroxysm of auricular fibrillation followed by death on the eleventh postoperative day.

*Necropsy.*—Postmortem examination revealed moderate congestion of the lungs and liver, and a pulmonary infarct. The heart weighed 450 Gm. There was well defined hypertrophy of the right ventricle. The mitral valve was seen to be stenosed and rigid, barely admitting the tip of a small finger. Along the closure line on the aortic and tricuspid valves were rows of minute (2 mm.) fresh pinkish vegetations characteristic of acute rheumatic valvulitis. Sections of the myocardium exhibited focal areas of perivascular infiltration, including many eosinophils.

The site of the anastomosis was of particular interest. There was no unusual external reaction. However, it was occluded by a relatively fresh antemortem thrombus nonadherent to the walls and by section estimated to be at most a few days old. The structure of the red cells remained distinct. From the postmortem appearance it seemed likely that the shunt had functioned satisfactorily during at least the first postoperative week, in spite of the patient's serious state, but had become occluded during the terminal days of illness.

*Comment.*—In retrospect it was a mistake to undertake operative intervention at the time, in the presence of nebulous but nonetheless suspicious signs of rheumatic activity. A severe reactivation of rheumatic fever was in large measure responsible for this patient's hectic course and ultimate death eleven days after operation. This unpredictable reaction of rheumatic persons to physical trauma, commented on in the past,[17] will continue a potential risk in future cases, but the fatal outcome in this patient emphasizes the necessity for a careful search for signs of smouldering rheumatic activity in future candidates for this and similar surgical procedures.

### CONCLUDING REMARKS

The clinical improvement in the first 3 patients during twelve, five and four months, respectively, subsequent to operation has been remarkable. None has had pulmonary edema. Their exertional dyspnea and palpitation have lessened. Direct measurement of the left auricular pressure at the time of operation confirmed clinical and catheter studies indicative of extreme pulmonary hypertension four to five times the normal range. Collateral determinations under similar conditions in patients with normal hearts have revealed left auricular pressures of approximately 100 mm. of water.

It has been demonstrated at operation that a significant lessening of left intra-auricular pressure follows release of the shunt. On the other hand, in no instance has there been clinical evidence that this reduction in left auricular pressure was sufficient to impair the peripheral circulation. (There was a suspicion of this in case 5, but other factors dominated the picture.) Nevertheless, too large a shunt is undesirable, too small a shunt may ultimately occlude. It is hoped that the one under consideration may avoid both extremes.

No significant murmur attributable to the shunt has been audible on closure of the chest, even at the time one can be certain the anastomosis is fully patent. Perhaps the high pressure gradient and sustained flow through the shunt preclude a murmur.

Further study and experience are essential to determine whether or not the present shunt is adequate. It may be that a direct anastomosis without the intermediate vitallium® tube will be preferable, or the use of larger vessels may be required. However, in these early cases the simplest method and the smallest shunt that offered promise seemed preferable.

### SUMMARY

A newly devised operative procedure for the relief of recurring pulmonary edema secondary to advanced mitral stenosis is presented. It consists of an extracardiac shunt to provide an outlet from the high pressure left auricle–pulmonary vein area into the systemic venous bed. This is accomplished by anastomosing the dorsal segment branch of the right inferior pulmonary vein to the azygos vein.

The procedure has been undertaken in 5 patients during the past year. The subsequent improvement in the first 3 has been remarkable. Insufficient time has elapsed (two months) in case 4 to warrant conclusions, but progress to date has been satisfactory. The fifth patient succumbed on the eleventh postoperative day to a severe recrudescence of rheumatic fever.

Direct measurements of pressure in the left auricle at operation confirm clinical and catheter studies indicative of extreme pulmonary hypertension. A significant reduction in this pressure on release of the shunt has been measured. It is hoped that its dampening effect will be adequate to protect these patients from acute vascular crises within the lungs. The rationale, indications and limitations of this procedure are discussed.

The present report is preliminary, and further study of technics and results are essential for final appraisal. It is to be emphasized that this is not a procedure to be undertaken for patients with large weak hearts: it is designed for those with small strong hearts as a protection to the lungs. It is a compromise and not a cure.

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[17] Bland, E. F., and Jones, T. D.: Clinical Observations on the Events Preceding the Appearance of Rheumatic Fever, J. Clin. Investigation **14**: 633, 1935.

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# CONTRACEPTION AMONG TWO THOUSAND PRIVATE OBSTETRIC PATIENTS

ALAN F. GUTTMACHER, M.D.
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and
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Baltimore

There are many unknowns in any formula describing the sexual conduct of the American people. Some of these have been partially solved through the efforts of the amazing Dr. Kinsey. Not only has Dr. Kinsey produced facts but, far more important, he has stressed principles. The foremost, that one cannot make generalizations which apply to the sexual practices of the American. In matters of sex there is no typical Mr. or Mrs. America, for our sexual mores are stratified, each layer largely determined by educational background and economic status.

It therefore becomes important in establishing the status of modern contraception to inquire into the conceptional and anticonceptional histories and practices of all types of people, under all conditions, from all walks of life and from all parts of the country. Most of the studies previously reported have been based on specialized groups under specialized conditions—namely, contraceptive clinic patients who are not pregnant and are urgently desirous of remaining not pregnant. In most instances they seek help because they are harassed by too much fertility and too little money. There have been but few surveys of the private patient group.[1] Then too, there are surprisingly few contraceptive studies on the pregnant woman; especially the woman who has just achieved pregnancy voluntarily or involuntarily.

### CLINICAL MATERIAL AND METHOD

The present survey is therefore unusual, for it deals with the contraceptive history and practices of 2,000 private obstetric patients. During the past several years one of us (A. F. G.) obtained from all patients who came to register for prenatal care and delivery, in

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*Read on Feb. 26, 1949* at the Conference on Population Trends and the Family, sponsored by the Committee on Human Reproduction, National Research Council, in behalf of the National Committee on Maternal Health, Inc.

[1] Dewees, L., and Beebe, G. W.: Contraception in Private Practice, J. A. M. A. **110**:1169-1172 (April 9) 1938; Contraception and Planned Parenthood in Private Practice, Human Fertil. **5**: 76-80 (June) 1940. Warner, M. P.: Contraception: A Study of Five Hundred Cases from Private Practice, J. A. M. A. **115**: 279-285 (July 27) 1940.

addition to the ordinary obstetric history, answers to four questions, the questions applying only to the gestation then current. Did you use contraceptives? What method did you employ? [illegible] planned? When was contraception [illegible] fact that all the histories were taken by a single, interested person adds much to the accuracy and uniformity of the data. This was reimpressed on me when I recently attempted to analyze the contraceptive data from 1,000 histories at the obstetric clinic of the Johns Hopkins Hospital and the Sinai Hospital of Baltimore. They contained exactly the same questions, phrased in the same way, but many of the answers were left blank or at most only partially filled out. No doubt a time-deficient assistant resident simply asked, "Did you use contraceptives?" The patients almost uniformly answered in the negative, for in the blank after "contraceptive used" appears the word "none" in over 90 per cent. Yet the fact that in a sizeable proportion of these clinic patients several years had elapsed since the last pregnancy makes me exceedingly dubious of the accuracy of the information. Probably the patient did not know what the word contraception meant or, if she did, confused the word with a single technic, most likely the condom.

TABLE 1.—*Distribution of Pregnancies by Age and Religion of Wife, Occupation of Husband, Pregnancy Order, and Number of Children Living*

| | Pregnancies | % |
|---|---|---|
| Age (Yrs.) | | |
| 15 to 19 | 38 | 1.9 |
| 20 to 24 | 512 | 25.7 |
| 25 to 29 | 732 | 36.7 |
| 30 to 34 | 479 | 24.0 |
| 35 to 39 | 197 | 9.9 |
| 40 and over | 38 | 1.9 |
| Not recorded | 4 | .... |
| Religion | | |
| Jewish | 1,196 | 60.7 |
| Christian | 774 | 39.3 |
| Not recorded | 30 | .... |
| Occupation | | |
| Professional workers | 513 | 29.4 |
| Business executives and owners | 401 | 23.0 |
| Business employees | 660 | 37.8 |
| Manual workers and farmers | 173 | 9.9 |
| Unclassified, including armed forces | 253 | .... |
| Pregnancy order | | |
| First | 919 | 46.0 |
| Second | 680 | 34.1 |
| Third | 264 | 13.2 |
| Later | 133 | 6.7 |
| Not recorded | 4 | .... |
| Children living | | |
| None | 1,111 | 55.6 |
| One | 681 | 34.1 |
| Two | 168 | 8.4 |
| More | 37 | 1.9 |
| Not recorded | 3 | .... |
| Total | 2,000 | 100.0 |

TABLE 2.—*Distribution of Pregnancies by Pregnancy Order and Planning Status*

| Pregnancy Order | Total | Contraception Not Used | | Contraception Discontinued | | Failure of Contraception | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| First | 919 | 219 | 23.8 | 581 | 63.2 | 119 | 12.9 |
| Later | 1,081 | 128 | 11.8 | 698 | 64.6 | 255 | 23.6 |
| Total | 2,000 | 347 | 17.4 | 1,279 | 64.9 | 374 | 18.7 |

In this survey of the records of 2,000 private patients, we hoped to determine four things. First, what percentage of our deliveries are the result of planned pregnancies? Second, what methods of contraception have our patients used? Third, what is the relative effectiveness of the various methods as employed by them? Fourth, how long did it take our patients to achieve pregnancy after abandoning contraception?

As a preliminary to further development of these points it is necessary to make clear how the material was assembled and analyzed. With the help of Mr. Omer Huesman, the statistical technician of the Department of Obstetrics at Johns Hopkins Hospital, a thirty-three column code sheet was drawn up. Two of us (A. F. G. and S. R.) coded the pertinent data from 2,000 consecutive obstetric histories; the code sheets in turn were transferred to punch cards by trained clerks. Appropriate tables were then constructed with the aid of a sorting machine. Statistical analysis of the data was made in collaboration with Dr. Christopher Tietze.

Before determining the answers to the four questions it is necessary that we present some basic facts about the patients who form the material of this study. All were married at the time of conception and all lived in Baltimore or its environs, the most distant point being Washington, D. C. The initial office visit was usually at the eighth or ninth week of pregnancy, when the historical data forming the basis of this study were taken. At this time the memory of contraceptive practice and the time necessary for conception was still fresh, and much more vivid than it would have been seven months later, just after delivery. Over 99 per cent of the patients were white, there being 17 Negro women and 2 Chinese in the group. The husbands of the Negro patients were largely of the professional class: teachers, doctors, ministers or engineers.

TABLE 3.—*Distribution of Pregnancies by Number of Children Living and Planning Status*

| Number of Children Living | Total | Contraception Not Used | | Contraception Discontinued | | Failure of Contraception | |
|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % |
| None | 1,111 | 275 | 24.8 | 696 | 62.6 | 140 | 12.6 |
| One or more | 889 | 72 | 8.1 | 583 | 65.6 | 234 | 26.3 |
| Total | 2,000 | 347 | 17.4 | 1,279 | 64.0 | 374 | 18.7 |

## ANALYSIS OF DATA

Table 1 gives the general composition of the group. The majority of subjects, 62 per cent, were in the third decade of life, and more than 85 per cent were between the ages of 20 and 35. Sixty per cent of the women were Jewish. The Christians were not divided into Protestants and Catholics, though it is believed the Catholics were much outnumbered. Almost 30 per cent of the husbands were professional men: doctors, medical students, scientists, dentists, clergymen, teachers, engineers and lawyers. Twenty-three per cent were either business owners or executives. About 38 per cent were white collar workers, and the remaining 10 per cent manual workers. Most of the latter were *immigrés* to the local shipyards during the war. We found it impossible to classify the group in the armed forces by social-economic status, since all but a few were temporary soldiers rather than professional. The group was equally divided between officers and enlisted men.

The highly selected social-economic character of the clientele is reflected by the data on pregnancy order and the number of living children, the group being heavily weighted by women in their first pregnancy. Many classified as second pregnancies had only produced an abortus or a child which did not survive, as the 9.6 per cent difference between those in the first pregnancy and those with no living children indicates.

With this groundwork established—this delineation of the manner of man and woman making up the sample—we are now ready to consider the first question. What percentage of our deliveries are the result of planned pregnancies? The answer is set forth in tables 2 and 3. Of the 2,000 pregnant women who came to the obstetrician, 374, or 18.7 per cent, came regretfully, since they had not abandoned contraception and became pregnant despite its continued use. A much larger group, 1,279, or 64 per cent, came gleefully, having abandoned successful birth control with the goal to achieve pregnancy. Only 347, or 17.4 per cent, became pregnant without having used any contraceptive at all, some since the day of marriage, others since the termination of the previous pregnancy. Further analysis shows that 219 did not use contraception from the day they married. This group was mainly made up of the relatively elderly who could not afford to waste precious reproductive time, the very young who did not know the facts of life and the devout Catholics. The smaller group, 128, did not use contraception between the previous pregnancy and the current one under analysis. In almost every instance the previous pregnancy had terminated in an early spontaneous abortion. Patients in this study almost uniformly employed contraception for a variable period after a viable pregnancy.

TABLE 4.—*Pregnancies Following Contraception by Method Used*

| Method | Pregnancies | % |
|---|---|---|
| Condom | 669 | 43.3 |
| Diaphragm and jelly | 644 | 41.7 |
| Douche | 75 | 4.9 |
| Withdrawal | 72 | 4.7 |
| Rhythm | 46 | 3.0 |
| Suppositories | 21 | 1.4 |
| Cream or jelly alone | 17 | 1.1 |
| Several methods | 99 | .... |
| Not recorded | 10 | .... |
| Total | 2,000 | 100.0 |

If the group of patients who did not use contraceptives is added to those who abandoned contraceptives to achieve pregnancy, it appears that 81.4 per cent of the patients had wanted pregnancies. This figure is probably too high for the segment of population which our sample represents. First, it is unfair to assume that all who did not use contraception at any time after marriage or after a previous pregnancy actually wanted a baby immediately. Some probably mentally planned not to have a baby and either ignorantly, or devoutly, trusted to the fickle cooperation of nature. Second, unquestionably some members of the population went to the illegal abortionist and not to the obstetrician when contraception failed them. It is impossible to calculate or even estimate the size of either group.

We should like to point out from table 3 that contraceptive failure terminating in obstetric care was much commoner among the 889 women who had living children than among the 1,111 who had no living children. In fact, the incidence of failure was about twice as great. This must be due chiefly to the fact that the couples with living children have had a greater average duration of contraceptive exposure; does it also mean that they are less careful or that previous childbirth renders them anatomically less efficient for contraceptive success? More profound analysis, at a later date, of our complicated master work tables might furnish a solution to these questions.

TABLE 5.—*Pregnancies Following Contraception by Method and Planning Status*

| Contraceptive Method Used | Total Cases | Contraception Discontinued | Failure of Contraception | % Failures |
|---|---|---|---|---|
| Condom | 669 | 570 | 99 | 14.8 ± 1.4 |
| Diaphragm and jelly | 644 | 533 | 111 | 17.2 ± 1.5 |
| All others | 340 | 176 | 164 | 48.2 ± 2.7 |
| Total | 1,653 | 1,279 | 374 | 22.6 ± 1.0 |

The 18.7 per cent ratio of contraceptive failures is much lower than that reported by Whelpton and Kiser [2] in their Indianapolis study. They found that a little over half of all pregnancies not terminated by illegal abortion were the result of ineffective contraceptive methods. This difference between 19 per cent and 53 per cent is chiefly due to the fact that our material is drawn from the upper and middle classes to a much greater extent than the group reported from Indianapolis, where the sample consisted of urban, native-white Protestant couples with the minimum of an eighth grade education.

The second question we proposed, what methods of contraception have our patients used? is answered in table 4. The analysis includes the 64 per cent who abandoned contraception in order to conceive and the 18.7 per cent in whom conception was accidental and unwanted. Together the condom and diaphragm represented 85 per cent of the total contraceptives used. The 99 subjects whose histories are not included in our computations because they used "several methods" were largely couples who used the condom on one occasion and the diaphragm on another. A smaller number used the safe period in conjunction with the condom or diaphragm.

Certainly no one would claim that our observations are representative of a large segment of the population.

TABLE 6.—*Planned Pregnancies by Duration of Exposure*

| Mo. of Exposure | No. of Pregnancies | % of Pregnancies |
|---|---|---|
| 1 | 395 | 31.9 |
| 2 and 3 | 382 | 30.8 |
| 4 to 6 | 220 | 17.7 |
| 7 to 12 | 140 | 11.3 |
| 13 to 24 | 53 | 4.3 |
| 25 to 36 | 23 | 1.9 |
| Longer | 27 | 2.2 |
| Not recorded | 39 | .... |
| Total | 1,279 | 100.0 |

Koos [3] in 1947 showed that there are striking class differences in the employment of contraceptive measures. This report confirmed the earlier observations of Riley and White,[4] who showed that not only class but geographic area, size of community, age and religion affect the choice of contraceptive technic. From the previous literature plus our own study, one might postulate that in this country at least, the sophistication of any social group is in direct proportion to their use of the condom and diaphragm and in inverse proportion to their use of withdrawal and the postcoital douche.

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[2] Whelpton, P. K., and Kiser, C. V.: Social and Psychological Factors Affecting Fertility: VI. The Planning of Fertility, Milbank Mem. Fund Quart. **25**: 209-257 (Jan.) 1947.

[3] Koos, E. L.: Class Differences in the Employment of Contraceptive Measures, Human Fertil. **12**: 97-101 (Dec.) 1947.

[4] Riley, J. W., and White, M.: The Use of Various Methods of Contraception, Am. Sociol. Rev. **5**: 890-903 (Dec.) 1940.

The answer to question three, what is the relative effectiveness of the various methods as employed by them? is set forth in table 5. First, it is apparent that of the 1,653 pregnancies which were preceded by contraception, 374, or 22.6 per cent, occurred despite the continued use of contraceptives. We cannot say from this that our clientele's contraceptive methods are 77.4 per cent effective. We are still faced with the unknown number of contraceptive failures which are terminated illegally. Furthermore, in such a population sample there are couples who remain steadfastly undesirous of children. These never find their way to the statistical tables of the obstetrician or the clandestine corridors of the abortionist, because they practice contraception consistently and successfully throughout marriage.

We can say from table 5 that the condom and diaphragm as used by this population sample offered about equal protection and that they were equally superior to the other contraceptive methods. This is in line with earlier reports by many authors.

Table 6 answers the fourth and final question, how long did it take our patients to achieve pregnancy after abandoning contraception? Approximately one-third became pregnant immediately at the first ovulation after contraception was discontinued; another 30 per cent, at the second or third ovulation. In total, 62.7 per cent of the pregnancies occurred within the first three months and 90.8 per cent within the first year after the elimination of birth control. To be sure, there must have been an unknown number in this population who were chagrined because, in spite of the discontinuance of contraceptive practices, pregnancy did not result. They, too, have no path leading to these tables.

## SUMMARY

1. Almost two thirds of the 2,000 pregnancies occurred after contraception had been discontinued for the avowed purpose of initiating pregnancy. An additional sixth of the sample had not used contraception at all. Only 19 per cent of the pregnancies were the result of actual contraceptive failure.

2. The condom and the diaphragm were equally popular. These two methods were used by more than 85 per cent of those who practiced contraception in the group surveyed.

3. The relative effectiveness of the condom and the diaphragm, as used by this group, was approximately the same. These devices were far more effective than the other methods employed.

4. Three fifths of the planned pregnancies occurred within three months, and more than nine tenths within one year from the time contraception was discontinued. To us this seems decidedly significant. It might furnish the obstetrician and gynecologist grounds to pause and consider. It has been customary for the physician to show little interest or concern in the reproductive disappointments of a couple until sterility has continued for at least two, and usually three years. On the basis of these data we propose that one year is long enough.

1109 North Calvert Street (2).

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# THE SUBCUTANEOUS ADMINISTRATION OF MERCAPTOMERIN (THIOMERIN®)

### Effective Mercurial Diuretic for the Treatment of Congestive Heart Failure

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and
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The popularity and widespread use of the mercurial diuretics reflect the pharmacologic advances in obtaining preparations with a high degree of effectiveness and a minimal degree of toxicity. The presence of theophylline chemically linked to one valence of the mercury atom of the compound is the major reason for this favorable therapeutic range. It has been demonstrated that theophylline decreases the affinity of the mercurial for tissue, since it decreases the area and severity of irritation at the site of injection,[1] increases the rate and completeness of absorption from the site of intramuscular injection,[2] increases the elimination of mercury by the kidney[3] and increases the diuresis.[4] In terms of clinical usage this means that local irritation at the site of injection is lessened, that the predictability of obtaining a satisfactory response is high when the diuretic is administered intravenously and that on intramuscular injection, because of complete absorption, this predictability of response is also approached. In spite of the advantages attained by the theophyllinated mercurial diuretics, their use is still fraught with several dangers. The most serious is the occurrence of systemic reactions. In a review of the toxic manifestations of mercurial diuretics in man, DeGraff and Nadler[5] intimated that such reactions are becoming more frequent, particularly when the intravenous route of administration is used, and that a fatal outcome, although rare, is a possibility that must always be kept in mind. Further work[6] has demonstrated in the experimental animal that death is caused by the action of these drugs on the heart, with ventricular fibrillation as the terminal event. This observation is in accord with the clinical interpretation of the toxic manifestation.

Since to our knowledge death has not been reported with the intramuscular use of the mercurial diuretics this route of administration has become the one of choice by many. This technic, however, is not entirely satisfactory because: (1) the predictability of obtaining a satisfactory diuresis by intramuscular injection is

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1. DeGraff, A. C., and Batterman, R. C.: Reaction at Site of Injection of Mercurial Diuretics as Influenced by Theophylline, Proc. Soc. Exper. Biol. & Med. **32:** 1546 (June) 1935. DeGraff, A. C.; Batterman, R. C., and Lehman, R. A.: Limiting Content of Theophylline Necesary to Prevent Local Toxic Action of Mercurial Diuretics, ibid. **38:** 373 (April) 1938.

2. DeGraff, A. C.; Batterman, R. C., and Lehman, R. A.: The Influence of Theophylline upon the Absorption of Mercupurin and Salyrgan from the Site of Intramuscular Injection, J. Pharmacol. & Exper. Therap. **62:** *26 (Jan.) 1938.*

3. DeGraff, A. C.; Batterman, R. C.; Lehman, R. A., and Yasuna, E.: Excretion of Mercury Following Administration of Mercurial Diuretics With and Without Theophylline; Proc. Soc. Exper. Biol. & Med. **39:** 250 (Nov.) 1938.

4. DeGraff, A. C.; Nadler, J. E., and Batterman, R. C.: A Study of the Diuretic Effect of Mercupurin in Man, Am. J. M. Sc. **191:** 526 (April) 1936.

5. DeGraff, A. C., and Nadler, J. E.: A Review of the Toxic Manifestations of Mercurial Diuretics in Man, J. A. M. A. **119:** 1006 (July 25) 1942.

6. DeGraff, A. C., and Lehman, R. A.: The Acute Toxicity of Mercurial Diuretics, J. A. M. A. **119:** 998 (July 25) 1942.

less than that by the intravenous route; (2) the diuresis when obtained is slower in onset and less in degree than that obtained after intravenous injection, and (3) the available mercurial diuretics are still exceedingly irritating, necessitating deep intramuscular injection to avoid sloughs and excessive pain. Nevertheless, many patients complain of pain at the site of injection and nodule formation is not uncommon.

A mercurial diuretic which overcomes many of the objections inherent in the currently available preparations is known as mercaptomerin sodium (thiomerin sodium®),[7] the disodium salt of N(gamma-carboxymethyl-mercaptomercuri-beta-methoxy) propyl camphoramic acid. Lehman,[8] in a comparison of the acute cardiac toxicity of various mercurial diuretics, noted that this compound when judged in terms of immediate electrocardiographic changes in cats was less than one—one hundred and sixtieth as toxic as the maximum tolerated dose of mercurophylline injection (mercuhydrin®), which was the least toxic of the commercially available preparations. The new compound differs from the other mercurial diuretics in that the theophylline complex is replaced by a mercaptide group (fig. 1). The chemical structure of mercurophylline injection differs from that of mercaptomerin sodium only in the replacement of theophylline by the monothiol, sodium thioglycollate.

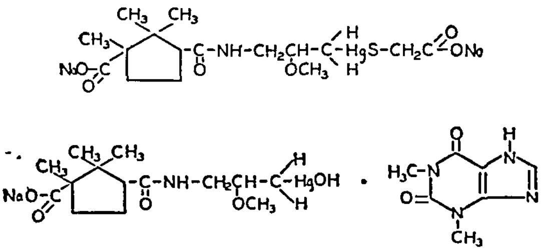

Fig. 1.—Structural formulas of mercaptomerin sodium (thiomerin sodium®) and, below, of mercurophylline injection (mercuzanthin®).

Not only is the cardiac toxicity decreased by this substitution, but the amount of local irritation at the site of injection is minimized to such a degree that the preparation is relatively painless for the patient on subcutaneous injection. Initial studies revealed that such an injection, although not entirely free of irritation, can be given with little if any discomfort to the patient and that the occurrence of nodular formation at the site of injection is unusual.

Since this appeared to be of definite advantage, the diuretic effectiveness when administered subcutaneously was determined in 6 patients with anasarca due to congestive heart failure not responding to rest in bed, maximum tolerated daily doses of digitalis and restricted salt and fluid intake. The urinary output was followed by means of continuous bladder catheterization. After a control period of thirty to sixty minutes each subject was given 2 cc. mercaptomerin sodium subcutaneously. Figure 2 illustrates the urinary flow in cubic centimeters per minute over a six hour period. It will be observed that the diuresis begins approximately one hundred and five minutes after the injection and reaches a sustained diuresis of over 5 cc. per minute in approximately one hundred and sixty-five minutes. This diuresis persists for two and one-half hours and gradually subsides, although at the termination of the study, or six hour period, the urinary output is still increased.

CLINICAL OBSERVATIONS

The effectiveness and safety of mercaptomerin for the treatment of congestive heart failure was studied according to several plans. First, an effort was made to compare the predictability of an effective diuretic response following an intravenous or subcutaneous injection of the drug with an intravenous injection of mercurophylline. For this purpose hospitalized patients with varying degrees of congestive heart failure were given the diuretics when the preliminary control period indicated that sufficient time had elapsed to evaluate concomitant therapeutic measures such as bed rest, digitalization and dietary restrictions. This method for studying diuretics has proved most satisfactory in our hands and has been reported previously.[9] By follow-

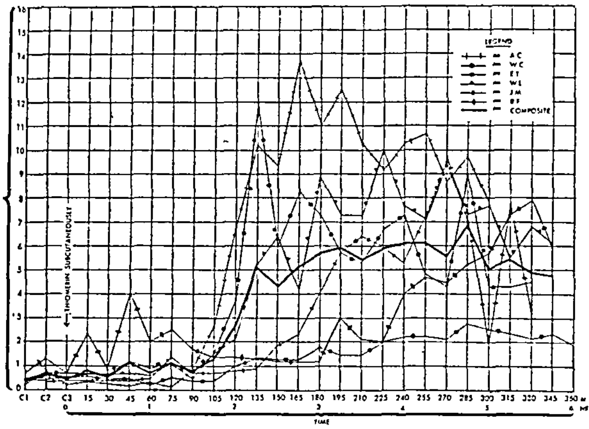

Fig. 2.—Urinary flow (in cubic centimeters per minute) following subcutaneous administration of 2 cc. mercaptomerin sodium (thiomerin sodium®).

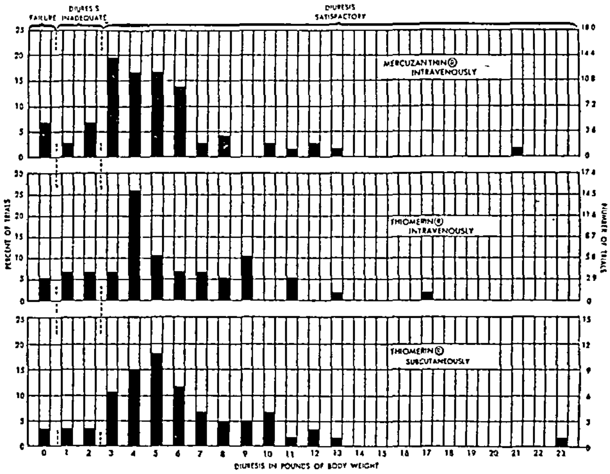

Fig. 3.—Degree of diuresis, as judged by weight loss, obtained by giving mercurophylline injection intravenously, mercaptomerin sodium (thiomerin sodium®) intravenously and the latter agent subcutaneously.

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[7] Each cubic centimeter of mercaptomerin sodium contains the equivalent of 40 mg. of mercury. The drug was supplied by Campbell Products, Inc., New York.

[8] Lehman, R. A.: Further Studies on the Acute Toxicity of Mercurial Diuretics, Proc. Soc. Exper. Biol. & Med. **64**: 428 (Nov.) 1947.

[9] DeGraff, A. C.; Nadler, J. E., and Batterman, R. C.: A Study of the Diuretic Effect of Mercupurin in Man, Am. J. M. Sc. **191**: 526 (April) 1936. Brightman, I. J., and Batterman, R. C.: The Treatment of Edema by Rectal Administration of Diuretics, J. Lab. & Clin. Med. **25**: 1038 (July) 1940. Batterman, R. C.; DeGraff, A. C., and Rose, O. A.: Treatment of Congestive Heart Failure with an Orally Administered Mercurial Diuretic, Am. Heart J. **21**: 98 (Jan.) 1941. Batterman, R. C.; DeGraff, A. C., and McCormack, J. E.: The Effectiveness and Safety of Mercupurin Administered Orally, J. A. M. A. **124**: 1243 (April 29) 1944. Batterman, R. C.; DeGraff, A. C., and Shorr, H. M.: Further Observations on the Use of Mercupurin Administered Orally, Am. Heart J. **31**: 431 (April) 1946.

ing the weight curve, it is possible to exclude those patients who have a spontaneous diuresis on bedrest alone or those patients who respond to digitalization. The diuretic is administered when the weight curve remains stable or indicates further accumulation of edema fluid. A diuretic response is considered effective if the patient loses at least 3 pounds (1.3 Kg.) of edema fluid over a period of forty-eight hours. In a comparison of the diuretics in the same patient, the edema fluid was allowed to accumulate to approximately the same degree before the diuretic was given.

Forty-five patients were the subjects in this phase of the investigation. The effectiveness of mercaptomerin as compared to mercurophylline for the removal of edema fluid of patients with congestive heart failure is presented in the accompanying table. From the data on predictability to achieve a satisfactory diuresis—that is, a weight loss of 3 pounds (1.3 Kg.) or more—it would appear that mercaptomerin when administered subcutaneously is a decidedly satisfactory diuretic. The predictability of response in each of the three groups of patients, whether they received mercurophylline intravenously, mercaptomerin intravenously or the latter drug subcutaneously, is for all practical purposes identical. Further evidence which indicates the similarity of degree of diuresis for the subcutaneous administration of the latter as compared with the intravenous administration of either of the two diuretics is depicted in figure 3. Inadequate diuresis or failure to respond with mercaptomerin was the result usually of (1) lack of ammonium chloride, (2) digitalis therapy or (3) terminal heart disease and corresponded to our previous experience with other mercurial diuretics.

*Predictability of Obtaining a Satisfactory Diuresis*

| | | | | Diuresis | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Satisfactory | | Inadequate | | Failure | |
| Diuretic | Route | No. of Patients | Trials | No. | % | No. | % | No. | % |
| Mercurophylline injection | Intravenous | 30 | 72 | 60 | 83.3 | 7 | 9.7 | 5 | 6.9 |
| Mercaptomerin sodium | Intravenous | 32 | 58 | 47 | 81.0 | 8 | 13.8 | 3 | 5.2 |
| Mercaptomerin sodium | Subcutaneous | 27 | 60 | 52 | 86.6 | 6 | 10.0 | 2 | 3.3 |

In all patients urinalyses after administration of the diuretic revealed no abnormality. One patient had nausea and vomiting ten minutes after intravenous injection of mercaptomerin.

### USE OF MERCAPTOMERIN SODIUM FOR AMBULATORY PATIENTS

Thirty-five ambulatory patients attending the clinic for severe congestive heart failure were given mercaptomerin sodium whenever a mercurial diuretic was clinically indicated. All patients were on a maximum tolerated daily dosage of digitalis as well as ammonium chloride 3 Gm. a day. The diuretic in a dosage of 1 to 2 cc. was administered at weekly or biweekly intervals. The number of injections per patient varied between one and thirty-two, with the majority of the patients receiving more than four. In all, there were two hundred and twenty-six injections, of which two hundred and five were given subcutaneously, nineteen intravenously and two intramuscularly. Of particular interest was the subcutaneous route, which was effective in removal of the edema, prevention of the accumulation of edema and maintenance of the patients' state of compensation. In this regard it was as satisfactory as the previously used diuretics which were given intravenously or intramuscularly. In only 1 patient was there any systemic reaction. This consisted of mild chills, fever and diarrhea, which lasted for no more than two hours. It was similar to the reactions obtained previously with mercurophylline.

### TOLERANCE OF MERCAPTOMERIN SODIUM FOR HOSPITALIZED PATIENTS

Thiomerin® therapy was given a group of 73 hospitalized patients with the severest degree of chronic congestive heart failure that may be encountered in heart disease. All patients were at absolute rest in bed on a maximum tolerated daily dose of a digitalis preparation, ammonium chloride and restricted salt intake. Either mercurophylline injection or meralluride sodium solution (mercuhydrin®) by intravenous or intramuscular routes were used prior to administration of mercaptomerin sodium, so that the diuretic response of these agents was well known. The number of injections of mercaptomerin varied from one to twenty-two, with the majority of patients receiving five or more. In all, there were three hundred and thirty-four injections, of which all but ten were given subcutaneously. The usual dose was 2 cc., but in 7 instances, in which the patient required a higher dose of a mercurial diuretic for an effective response, 3 and 4 cc. were given subcutaneously to 5 and 2 patients, respectively. In general the diuretic response to the drug administered subcutaneously was as satisfactory as that to the previously used mercurial diuretics either intramuscularly or intravenously. In several instances the subcutaneous use of mercaptomerin gave a better response than the intramuscular injection of other mercurial compounds. Systemic reaction occurred in 1 patient and consisted of mild chills and fever both after a subcutaneous and after an intramuscular injection of the agent. It was similar to reactions noted previously in the same patient when mercurophylline injection was used.

### *LOCAL TOLERANCE*

The local tolerance of mercaptomerin sodium when administered intramuscularly was compared to that of meralluride sodium solution. Each subject was given 1 cc. of the diuretic into the gluteal area. Nine of 15 subjects who received meralluride had burning pain which persisted from ten minutes to several hours. One of these patients exhibited induration twenty-four hours after the injection. Ten of 24 subjects who received mercaptomerin had similar complaints, but without induration or nodule formation. To test further the local tolerance of the diuretic, the drug was injected in doses of 0.25 to 2 cc. subcutaneously in a group of 30 subjects. In all cases the injections were tolerated well, although with the higher dose of 1 or 2 cc. slight burning was noted, which subsided in a few minutes. In no instance was there any evidence of induration or nodular formation twenty-four hours after the injection. In another group of 7 subjects the effect of the subcutaneous injection of 1 cc. of the agent was compared with that of 1 cc. isotonic sodium chloride solution. In 3 subjects the degree of local irritation as evidenced by burning at the site of injection was the same for the two compounds. In 2 instances the diuretic was slightly more irritating, and in 2 other instances the isotonic sodium chloride solution proved more irritating.

In clinical practice, mercaptomerin sodium was given subcutaneously in doses of from 1 to 4 cc. for a total of five hundred and eighty-nine injections to 143 hospital and ambulatory patients with edema. Subjective burning at the site of injection was not an infrequent complaint, occurring after approximately 10 per cent of the injections. Tender induration which usually subsided within forty-eight hours was noted after approximately 4 per cent of the injections and nodules occurred after approximately 2.5 per cent. The incidence of local reactions in this study is somewhat higher than would be expected with the use of the currently available form of this diuretic considering that at the onset of the study several experimental lots of the compound were more irritating on injection. Nevertheless, the local reactions which have been mentioned are not clinically significant in the majority of cases, since the degree of irritation appears to be only slightly greater than that which results from the injection of isotonic sodium chloride solution. None of the patients refused continuation of this method of therapy because of local irritation. In several instances this was considered by the patients to be less than that noted with the previously administered intramuscular injection of meralluride sodium solution or mercurophylline injection.

### COMMENT

The combination of a mercaptan, sodium thioglycollate, rather than theophylline with the mercurial portion of a diuretic has removed many of the shortcomings present in the currently available mercury diuretics. In addition to a definite decrease in acute cardiac toxicity as evidenced by pharmacologic studies, mercaptomerin sodium also possesses many clinical advantages. Its decreased local irritation allows for greater ease in administration and acceptance by the patient. Not only is the subcutaneous injection of this diuretic well tolerated by over 90 per cent of patients, but the predictability of a satisfactory diuretic response is similar to that obtained by the intravenous route. Previous experience with currently available diuretics has demonstrated that the use of the intramuscular route is not ideal. In our desire to avoid the acute toxicity and reactions occasionally noted when the diuretics are administered intravenously, we have utilized the intramuscular route only to encounter several objections. Not only is local tolerance of the diuretics by this route unsatisfactory but the predictability of a diuretic response and the degree of diuresis are less than that obtained with the intravenous route. Many patients preferred to have mercaptomerin administered subcutaneously because they obtained a greater diuresis than that noted with other mercurial compounds given intramuscularly.

The predictability of a satisfactory diuretic response and the degree of diuresis by the subcutaneous use of this agent are similar to those noted with the intravenous administration of all mercurial diuretics. When a patient is receiving the currently available diuretics by the intravenous route and the response is poor, no greater response will occur by the substitution of mercaptomerin. However, if the mercurial diuretics have been used intramuscularly, substitution of the subcutaneous administration of this compound may result in a greater diuretic response.

It is too soon to state whether the use of mercaptomerin sodium will result in a lower incidence of systemic reactions other than cardiac. However, in view of the chemical similarity of this diuretic and mercurophylline injection, it could be predicted that patients who experience systemic reactions to the latter will also do so to the former. Two patients in our study manifested mild systemic reactions to mercaptomerin similar to those observed previously after use of mercurophylline. Thus, caution is required in the use of mercaptomerin, regardless of the route of administration, in those patients who have had systemic reactions to mercurophylline. With this exception we have found mercaptomerin to be a satisfactory and safe mercurial diuretic.

### CONCLUSIONS

1. Mercaptomerin (thiomerin®) is an effective and safe diuretic which may be administered subcutaneously to advantage with minimal irritation at the site of injection.

2. Although the subcutaneous administration of this drug may result in a slower diuresis, the predictability of a satisfactory diuretic response and the degree of diuresis achieved are similar to those noted with the intravenous use of mercurophylline injection.

3. Mercaptomerin sodium administered subcutaneously is superior to other mercurial diuretics administered intramuscularly.

# Clinical Notes, Suggestions and New Instruments

## BENZODIOXAN TEST

### Fall in Blood Pressure Following Its Use in a Case of Renal Hypertension

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Goldenberg, Snyder and Aranow[1] have recently reported 4 proved cases of pheochromocytoma in which the adrenolytic benzodioxan drugs were first used as diagnostic agents. Benzodioxan derivatives (933 F, 2-[1-piperidylmethyl]-1,4-benzodioxan and 1164 F, [2,4-dimethyl piperidyl] methylbenzodioxan) given intravenously produced a significant fall in blood pressure lasting from thirteen to sixteen minutes in 3 cases and a "short and slight drop" in blood pressure in the fourth. Several of the same patients have been reported on elsewhere.[2]

Of the other drugs used in the diagnosis of pheochromocytoma it has been shown that histamine given intravenously causes a sharp rise in blood pressure[3]; similar results have been obtained by use of tetraethyl ammonium bromide[4] and methacholine bromide (mecholyl® bromide).[5] Dibenamine® hydrochloride (N,N-dibenzyl-beta-chlorethylamine hydrochloride) in one case depressed the hypertension.[6]

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From the Departments of Pharmacology and Medicine of the Medical College of Virginia.

[1] Goldenberg, M.; Snyder, C. H., and Aranow, H., Jr.: New Test for Hypertension Due to Circulating Epinephrine, J. A. M. A. **135**: 971 (Dec. 13) 1947.

[2] Ganem, E. J., and Cahill, G. F.: Pheochromocytomas Coexisting in Adrenal Gland and Retroperitoneal Space, with Sustained Hypertension, New England J. Med. **238**: 692 (May 13) 1948. Bruce, G. M.: Changes in the Ocular Fundus Associated with Pheochromocytoma of the Adrenal Gland, Arch. Ophth. **39**: 707 (June) 1948. Cahill, G. F.: Pheochromocytomas, J. A. M. A. **138**:180 (Sept. 18) 1948.

[3] Roth, G. M., and Kvale, W. F.: A Tentative Test for Pheochromocytoma, Am. J. M. Sc. **210**: 653 (Nov.) 1945. Calkins, E., and Howard, J. E.: Bilateral Familial Phaeochromocytomata with Paroxysmal Hypertension: Successful Surgical Removal of Tumors in Two Cases, with Discussion of Certain Diagnostic Procedures and Physiological Considerations, J. Clin. Endocrinol. **7**: 475 (July) 1947.

[4] LaDue, J. S.; Murison, P. J., and Pack, G. T.: The Use of Tetraethylammonium Bromide as a Diagnostic Test for Pheochromocytoma, Ann. Int. Med. **29**: 914 (Nov.) 1948.

[5] Guarneri, V., and Evans, J. A.: Pheochromocytoma: Report of a Case, with a New Diagnostic Test, Am. J. Med. **4**: 806 (June) 1948.

[6] Spear, H. C., and Griswold, D.: The Use of Dibenamine in Pheochromocytoma, New England J. Med. **239**: 736 (Nov. 11) 1948.

The patient whose case is reported herein is believed to have renal hypertension. The case is of interest because the blood pressure fell from 200 mm. of mercury systolic and 165 mm. diastolic to 120 mm. of mercury systolic and 98 mm. diastolic following the first benzodioxan test, while in two subsequent tests the fall was progressively less. The results of a fourth benzodioxan test performed six days after the first and a histamine test were negative.

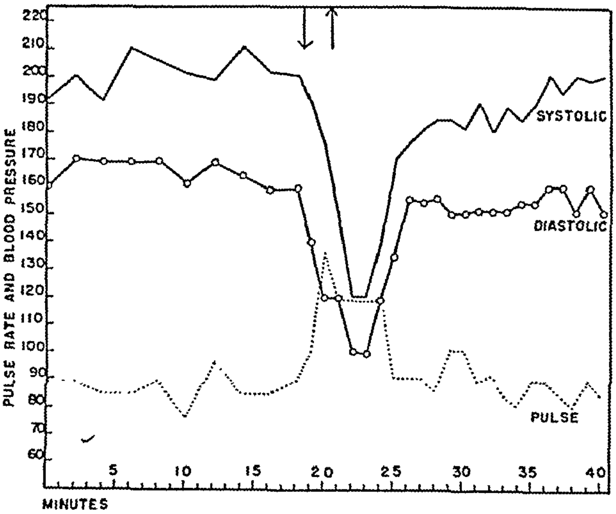

Chart 1.—Effects on blood pressure and pulse rate of first benzodioxan test: ↓ indicates beginning of injection and ↑ indicates end in this and succeeding charts.

REPORT OF CASE

*History.*—J. R., a Negro aged 18, entered St. Philip Hospital on Feb. 19, 1949 because of severe frontal headache of about one month's duration with associated vomiting and increasing drowsiness. The review of systems was negative; the remainder of the history was noncontributory. The patient stated that his blood pressure had never been determined.

*Physical Examination.*—Examination revealed a well developed and well nourished young man who was lethargic, acutely ill and complaining of severe headache. The blood pressure was 190 mm. of mercury systolic and 145 mm. diastolic, the pulse rate was 90 per minute, the respiratory rate 18 per minute and the temperature 99 F. The eyegrounds showed grade 4 retinopathy with arteriolar spasm, arteriovenous compression, haziness of the disk margins and many exudates. The heart was not enlarged, and there were no murmurs or thrills. The lungs were clear. Examination of the abdomen did not reveal masses or tenderness; the kidneys, liver and spleen were not palpable. The systolic blood pressure in the leg was greater than 260 mm. of mercury, and the diastolic pressure was 200 mm. Results of the neurologic examination were within normal limits.

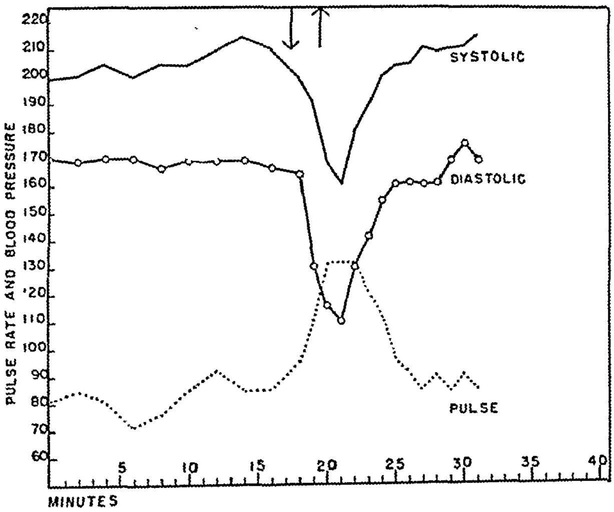

Chart 2.—Effects on blood pressure and pulse rate of second benzodioxan test.

*Laboratory Data.*—Examination of the blood revealed the following: hemoglobin 18 Gm., red blood cells 6,740,000, white blood cells 5,200 and a normal differential count. The packed cell volume was 54 per cent. The nonprotein nitrogen level of the blood was 76 mg. and the creatinine determination 6.3 mg., per hundred cubic centimeters. Reactions of the blood to flocculation and Wassermann tests were positive. Blood chlorides were 102, carbon dioxide-combining power 26, sodium 148 and potassium 5.9 milliequivalents per liter. Several urinalyses revealed 2 to 4 plus reactions for albumin, 7 to 15 red blood cells and up to 20 white blood cells per high power field, with occasional casts in the spun sediment. In a Mosenthal concentration test the greatest specific gravity was 1.015. A phenolsulfonphthalein test showed 32 per cent excretion in two hours. Urine cultures demonstrated hemolytic streptococci and Escherichia coli.

An electrocardiogram showed left axis deviation. On a roentgenogram of the chest the lungs were found to be clear, and the cardiac silhouette was normal. Cystoscopic studies revealed delayed excretion of indigo carmine, and retrograde urograms disclosed no abnormalities except bifid renal pelves.

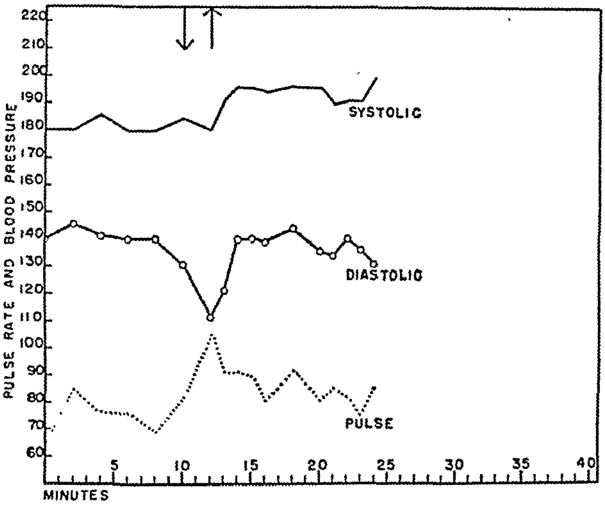

Chart 3.—Effects on blood pressure and pulse rate of third benzodioxan test.

*Treatment and Course.*—During the first week in the hospital the blood pressure ranged from 188 to 220 mm. of mercury systolic and 145 to 190 mm. diastolic. There was one reading charted as 140 mm. of mercury systolic and 70 mm. diastolic, but this was believed to be almost certainly an error.

On February 25 the patient was given 16.8 mg. (10 mg. per square meter) of benzodioxan[7] in a 1 per cent solution in sterile water intravenously during a period of two minutes. The blood pressure, which had averaged about 200 mm. systolic and 165 mm. diastolic fell to 120 mm. systolic and 98 mm. diastolic within three and one-half minutes, while the pulse rate increased from 95 to 135 beats per minute. The blood pressure and pulse returned nearly to preinjection levels in eight and six minutes, respectively (chart 1). The result was considered positive and evidence in favor of pheochromocytoma. It was then realized that the patient had received 30 mg. of phenobarbital four times a day during the preceding three days (no other medicament had been given). Earlier workers have found that normal animals anesthetized with amobarbital (amytal®) manifest a drop in blood pressure after administration of benzodioxan,[8] and Goldenberg and associates[1] have pointed out the clinical implications of these observations. The consideration therefore arose that the fall in blood pressure in this patient might have been associated with the administration of phenobarbital. The phenobarbital therapy was consequently discontinued, and on February 26, fifteen hours later, the second benzodioxan test was made, giving 18 mg. of the drug in 1 per cent solution in two minutes intravenously. A definite fall in blood pressure and tachycardia were again observed (chart 2). However, the fall in systolic blood pressure was less than in the first test.

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[7] The benzodioxan (2-[1-piperidylmethyl]-1,4-benzodioxan) used in these studies was supplied by Dr. R. C. Pogge of Merck & Co., Rahway, N. J.

The third test, performed on February 28, with 18 mg. of the drug in 1 per cent solution given intravenously in two minutes, resulted only in a brief fall in the diastolic pressure and a slight tachycardia (chart 3).

To investigate further any possible relation between the barbiturate which the patient had received and the response to benzodioxan, phenobarbital, 30 mg. four times a day, was begun again on March 1. On March 3, with the control blood pressure 158 mm. of mercury systolic and 124 mm. diastolic, the fourth benzodioxan test was performed using 18 mg. in 1 per cent solution intravenously in two minutes (chart 4). No significant change in systolic or diastolic blood pressure or in pulse rate was observed. The depressor effect of benzodioxan therefore seemed to diminish with each test and to be unrelated to the previous administration of this dose of phenobarbital.

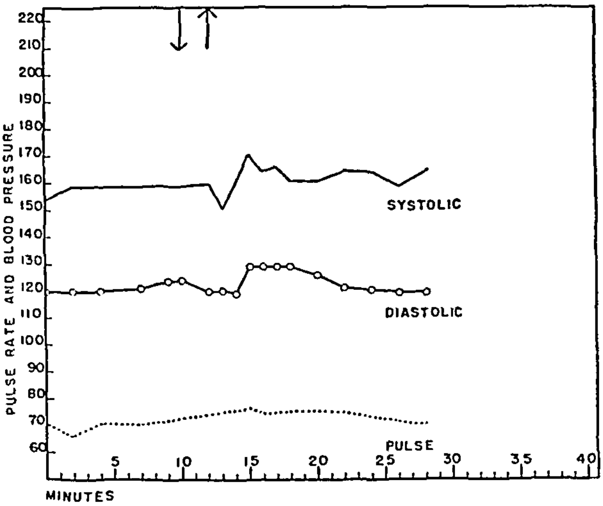

Chart 4.—Effects on blood pressure and pulse rate of fourth benzodioxan test.

In view of the current opinion that pheochromocytoma may cause sustained (as well as paroxysmal) hypertension, this diagnosis was still considered tenable. Therefore certain other diagnostic drugs, previously mentioned, were used. Five mg. per kilogram of dibenamine® (by intravenous drip in 400 cc. of 5 per cent dextrose) resulted in negligible changes in blood pressure. Tetraethyl ammonium chloride (400 mg. intravenously) produced a profound fall in blood pressure. This response is characteristic of essential or renal hypertension in contradistinction to the results reported by LaDue, Murison and Pack in their case of pheochromocytoma.[4] A histamine test[3] was performed, using 0.05 mg. histamine base intravenously. This resulted in a transient fall in blood pressure followed by a slight rise over resting values of about 10 mm. of mercury, constituting again a negative reaction for pheochromocytoma. Methacholine bromide was not used.

During his hospitalization the patient was treated with bed rest, antibiotics for the urinary tract and for syphilitic infections and the Kempner rice diet. He rapidly became asymptomatic. The lesions of the optic fundi regressed but did not disappear, and the resting blood pressure fell gradually to about 130 mm. of mercury systolic and about 90 mm. diastolic. After antibiotic therapy cultures of the urine exhibited no growth. The nonprotein nitrogen level of the blood fell to 41 mg. per hundred cubic centimeters, but renal function did not improve as measured by the Mosenthal concentration and phenolsulfonphthalein excretion tests. The patient was discharged on the thirty-eighth day, to be followed in the outpatient department. It was believed that the diagnosis of pheochromocytoma was excluded by the clinical course and the studies described. The final diagnosis was renal hypertension.

## COMMENT

The most striking observations in this case of hypertension were the initial depressor response to benzodioxan administration and the disappearance of this response on subsequent injections of the drug.

It might be argued that the previous administration of phenobarbital caused the depressor responses of the first benzodioxan tests, but in our opinion this did not obtain. Evidence for this view is the failure to duplicate these initial results on readministration of the barbiturate. Furthermore, in several other patients with chronic hypertension who were previously given large amounts of barbiturates no fall in blood pressure following administration of the benzodioxan derivative has been observed.

## CONCLUSION

Studies on this patient lead us to conclude that there is need for caution in interpreting a depressor response after benzodioxan as evidence of the presence of pheochromocytoma.

## ADDENDUM

The patient was seen at frequent intervals in the outpatient department, and it was noted that the hypertension and azotemia gradually returned. Subsequent to the submission of the foregoing report and seven weeks after the patient's discharge from the hospital he died at home. Permission for necropsy could not be obtained.

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[8] Heymans C., and Bouckaert, J. J.: Au sujet des influences du pipéridométhyl-3-benzodioxane (F. 933) sur la système circulatoire, Compt. rend. Soc. de biol. **120**: 79, 1935.

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# TREATMENT OF A PATIENT WITH A PHEOCHROMOCYTOMA

## Use of an Adrenolytic Drug Before and During Operation

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Since Goldenberg, Snyder and Aranow[1] reported their experiences using 2-(1-piperidylmethyl)-1,4-benzodioxan (933 F) in the diagnosis of hypertension caused by circulating epinephrine liberated from functioning tumors of the adrenal medulla, many have confirmed their results. Possibility of failure and value of other tests have been reviewed by Roth and Kvale.[2] It is well known that pheochromocytomas, whether associated with paroxysmal or persistent hypertension, are removed with difficulty because anesthetic agents and operative manipulation often cause excessive elevations or fluctuations of blood pressure and subsequent reduction and shock. The present high surgical mortality rate (3 of 20 operations reported in the literature since 1943, as reviewed by Hatch, Richards and Spiegl[3]) is attributed to epinephrine intoxication. Injection of

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United States Public Health research fellow in surgery (Dr. Longino).

Aided by a grant from the American Foundation for High Blood Pressure.

From the Departments of Surgery and Pediatrics, Duke University School of Medicine.

Supplies of 2-(1-piperidylmethyl)-1,4-benzodioxan (933 F) were furnished by Merck & Co.

Supplies of 2 (N, para-tolyl-N [m-hydroxyphenyl]-aminomethyl)-imidazoline hydrochloride (C 7337) and a grant in aid were given by Ciba Pharmaceutical Products, Inc.

[1] Goldenberg, M.; Snyder, C. H., and Aranow, H., Jr.: New Test for Hypertension Due to Circulating Epinephrine, J. A. M. A. **135**: 971-976 (Dec. 13) 1947.

[2] Roth, G. M., and Kvale, W. F.: Pharmacologic Tests as an Aid in Diagnosis of Pheochromocytoma, Mod. Conc. Cardiovasc. Dis. **18**: 41-42 (May) 1949.

[3] Hatch, F. N.; Richards, V., and Spiegl, R.: Adrenal Medullary Tumor (Pheochromocytoma), Am. J. Med. **6**: 633-642 (May) 1949.

epinephrine can cause increase or decrease of blood pressure. Also, tumors may contain epinephrine or non-epinephrine.[4] Behavior of a patient who has a pheochromocytoma with circulating epinephrine and who is then treated continuously with an adrenolytic drug is therefore problematic and has not to our knowledge been reported. Experiences during treatment of 1 patient will be described. Incidentally, among 61 patients with hypertension tested by use of 2-(1-piperidylmethyl)-1,4-benzodioxan this is our first patient who had definite reduction of blood pressure. Also, he is the only one with a proved pheochromocytoma.

### REPORT OF CASE

L. H., a Negro boy aged 10 and weighing 21.9 Kg., gave a history of recurrent abdominal pain on the right side, progressive fatigue and exertional dyspnea during ten months. Examination revealed a blood pressure of 184 mm. of mercury systolic and 150 mm. diastolic; there was retinal edema with early papilledema, hemorrhages and exudates; the pulse rate was 145 per minute. Electrocardiograms were interpreted as within normal limits except for tachycardia. Blood sugar levels on three occasions were 111, 114 and 120 mg. per hundred cubic centimeters. Tests of renal function were normal, and the nonprotein nitrogen determination was 29 mg. per hundred cubic centimeters. Blood potassium and sodium and also serum and urine chloride determinations yielded normal values. Intravenous urograms did not demonstrate abnormality.

During eighteen days of observation the blood pressure remained elevated, fluctuating between 208 systolic and 160 diastolic and 176 systolic and 130 diastolic. Episodes of sweating, headache, tachycardia and greater rise of blood pressure recurred frequently during examination or with excitement. Intravenous administration of 2-(1-piperidylmethyl)-1,4-benzodioxan (0.25 mg. per kilogram of body weight) was associated with reduction of blood pressure from 180 systolic and 150 diastolic to 128 systolic and 114 diastolic on one day and from 182 systolic and 140 diastolic to 146 systolic and 110 diastolic on another. Reduction lasted about fifteen minutes. Histamine phosphate injected intravenously (0.0005 mg. per kilogram) reduced blood pressure from 194 systolic and 150 diastolic to 166 systolic and 135 diastolic for three minutes, following which pressure rose to 212 systolic and 170 diastolic. Determination of blood adrenalin by W. W. Shingleton[5] revealed high values.

Nineteen days after admission to the hospital operative intervention was planned, and preoperative preparation using an adrenolytic drug was attempted. 2(N,para-tolyl-N [m-hydroxyphenol]-aminomethyl)-imidazoline hydrochloride (C 7337)[6] was selected from the many adrenolytic and sympatholytic drugs available as theoretically the most suitable for trial. Blood pressure, which fluctuated from 156 systolic and 134 diastolic to 218 systolic and 156 diastolic the morning of operation, was reduced to 80 systolic with the diastolic reading not obtainable immediately following intravenous injection of the adrenolytic drug, 0.33 mg. per kilogram. Within two minutes the blood pressure returned to 112 systolic and 84 diastolic. It remained at this level during the next forty minutes. The pulse rate increased to 170 per minute during the first two minutes following this injection and then remained around 90. The patient's condition seemed satisfactory and anesthesia was induced using ethylene supplemented by ether and d-tubocurarine chloride. Pressure rose gradually during the next twenty minutes while anesthesia was induced and the patient prepared. When it had reached 160 systolic and 138 diastolic the intravenous injection of the adrenolytic drug was repeated using a smaller amount, 0.08 mg. per kilogram. The blood pressure then decreased to 140 systolic and 116 diastolic. The operation lasted one and one-half hours. During the first fifty minutes, injections of the drug (0.08 mg. per kilogram) were repeated four times, whenever the blood pressure rose. Each injection was followed by a reduction toward normal values. During the trauma of exploration of the adrenal glands and manipulation and removal of a tumor 4.5 cm. in diameter and the right adrenal gland there was no associated increase of blood pressure. Fluctuations of the blood pressure during the first fifty minutes of operation ranged from 150 systolic and 130 diastolic to 200 systolic and 166 diastolic, but these fluctuations correlated with the injections of the adrenolytic agent rather than with trauma and possible expulsion of adrenalin into the blood stream. Injections were discontinued after the tumor was removed. The blood pressure decreased gradually to values around 100 systolic and 70 diastolic during the twenty minutes of operation following removal of the tumor. It remained at normal levels around 120 systolic and 80 diastolic continuously during the immediate postoperative course and the thirteen days that lapsed to the time the patient was discharged from the hospital. It was 106 systolic and 68 diastolic two and one-half months later. Retinitis cleared except for old exudates, and symptoms were relieved. Pathologic examination revealed that the tumor was a benign pheochromocytoma.

### COMMENT

This experience is reported because it confirmed the impression of the authors that adrenolytic drugs are useful, although probably not infallible, in the diagnosis of adrenalin-secreting tumors and that they may also be employed to treat hypertension associated with these tumors and to protect the patient against extreme fluctuations of blood pressure during anesthesia and operative removal of the tumor. Such fluctuations frequently lead to a vasomotor collapse, which contributes to the relatively great risk of these operative procedures. It is hoped that fluctuation of pressure and shock may be avoided in other patients who have this relatively rare type of tumor.

# TRANSMISSION OF STREPTOMYCIN-RESISTANT TUBERCLE BACILLI IN MAN

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A new and potentially serious problem of public health has been anticipated in view of the steadily increasing number of cases of pulmonary tuberculosis in which patients, after treatment with streptomycin, remain sputum positive with the tubercle bacilli highly resistant to streptomycin. We have learned by animal experimentation that such resistance is probably permanent and that a tuberculous infection resistant to subsequent streptomycin therapy can be transmitted from one animal to another. Finally, there is growing evidence to indicate not only that streptomycin is ineffective in combating such an infection but that its use may actually accelerate the tuberculous process. The following case report indicates that such transmission of streptomycin-resistant tuberculosis can occur in man.

### REPORT OF CASE

A woman aged 36, a lieutenant of the Navy Nurse Corps, was admitted to the sick list on June 28, 1947 at the United States Naval Hospital, Corona, Calif. Her known exposure to tuberculosis began Aug. 17, 1946, when she was assigned to the Streptomycin Study Unit at the United States Naval Hospital, Sampson, N. Y., during the course of which study a considerable number of the patients who were treated became highly resistant to streptomycin. Routine roentgenograms of the chest on Aug. 19, Sept. 10 and Dec. 4, 1946, revealed no evidence of pulmonary disease other than a small calcified nodule in the right third anterior interspace. This nurse had had no tuberculin tests until February 1947, at which time there was a negative reaction to purified protein derivative, first strength, while the response to a half-strength dilution of purified protein derivative, second strength, was questionable. A full second strength test was not given. A roentgenogram of the chest on March 3, 1947 revealed a minimal lesion in the right supraclavicular region which was not considered of clinical significance.

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[4] Goldenberg, M.; Faber, M.; Alston, E. J., and Chargaff, E. C.: Evidence for the Occurrence of Nor-Epinephrine in the Adrenal Medulla, Science **109**: 534-535 (May 27) 1949.

[5] Shingleton, W. W., and Baker, H. M.: Fluorometric Method of Determination of Adrenalin in Blood, Federation Proc. **8**: 145 (March) 1949.

[6] Grimson, K. S.; Chittum, J. R., and Longino, F. H.: Comparison of Effects of a New Ganglionic Blocking Agent and a New Sympatholytic, Federation Proc. **8**: 61, (March) 1949. Longino, F. H.; Grimson, K. S.; Chittum, J. R., and Metcalf, B. H.: Effects of a New Quaternary Amine and a New Imidazoline Derivative on the Autonomic Nervous System, Surgery, to be published.

From the Streptomycin Study Unit, United States Naval Hospital, Corona, Calif. (Lieutenant Commander Furtos) and the Western Trudeau Streptomycin Laboratory, Olive View, Calif. (Dr. Doane).

On April 11, 1947 this nurse was transferred to the United States Naval Hospital, Corona, Calif., as part of the Streptomycin Study Unit which was being formed at that hospital. She then began to lose weight, noted a productive cough, fatigue and finally pain in the anterior region of the right lung. A roentgenogram of June 18, 1947 revealed an increase in the previously observed lesion, for which reason she was admitted to the sick list. The sputum was negative for tubercle bacilli, but a culture of gastric contents obtained June 30, 1948 was highly positive, and the bacteria grew readily in Dubos liquid mediums containing as much as 1,000 micrograms of streptomycin per cubic centimeter. On July 3 a tuberculin reaction to the first strength of purified protein derivative was reported as 2 plus. On a regimen of rest in bed a small rarefaction appeared in the lesion and gastric cultures remained positive. On Oct. 2, 1947 a right phrenicotripsy was performed, followed soon after by the induction of pneumoperitoneum. The clinical course was then satisfactory until February, 1948, when a low grade peritonitis developed, followed by a peritoneal effusion. Streptomycin therapy was considered at this point, but the drug was not given in view of the known high bacterial resistance. The intraperitoneal injection of air was abandoned, and the patient made an uneventful recovery. She was finally discharged from the hospital Nov. 1, 1948 with apparently arrested disease.

### COMMENT

Unfortunately, we are unable to definitely state whether this represented a primary infection or a so-called "reinfection," since the "questionable" reaction to tuberculin was obtained just two or three weeks prior to the time that the lesion was first detected roentgenologically. The presence of a well calcified nodule in the roentgenogram suggests a previous infection of some sort. The coccidioidin skin reaction was negative, and the patient did not at any time in the past reside in a region endemic to either coccidioidomycosis or histoplasmosis. We have examined more than 385 patients for the presence of possible resistance to streptomycin prior to beginning a course of streptomycin therapy, and in no other instance was initially high bacterial resistance detected except in patients who had previously been treated with streptomycin. With a definite history of continuous exposure to bacterial resistance, as was true in this case, it is exceedingly likely that the infection was derived from some such resistant source.

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## STREPTOMYCIN-RESISTANT TUBERCLE BACILLI

### Isolation of Resistant Organisms from Pleural Fluid Prior to Institution of Streptomycin Therapy

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The following case report confirms the prediction that tuberculous persons whose organisms have become resistant to streptomycin may transmit such resistant tubercle bacilli to those with whom they come in contact.

### REPORT OF CASE

J. Q. C., a Negro hospital attendant aged 32, was admitted to the Veterans Administration Hospital, Washington, D. C., on May 13, 1947 for chills, fever, generalized weakness, muscular pains, nausea and vomiting. Physical examination revealed a few scattered fine rales in the lower axillary region on the right side and a moderately loud friction rub. During the first week of hospitalization the patient had several chills and continued to have an elevation of temperature as high as 104.4 F. On the seventh day of hospitalization physical and roentgen examination revealed the presence of a pleural effusion. Thoracentesis yielded 460 cc. of clear fluid which was proved, by culture and guinea pig inoculation, to contain tubercle bacilli. Streptomycin therapy, 1.8 Gm. a day, was instituted on May 26 and continued for thirty-six days. Under this regimen the patient improved remarkably, and the temperature gradually declined. In the two months following the cessation of streptomycin therapy he felt well and gained 17 pounds (7.7 Kg.). However, diffuse cloudiness of the lower part of the right lung persisted, and his temperature continued to show slight elevations.

During the following year his temperature was normal and numerous studies of sputum and gastric washings for acid-fast bacilli were negative. A roentgenogram of the chest taken in March 1948 disclosed considerable clearing at the base of the right lung with obliteration of the right costal phrenic sinus by thickened pleura, but pulmonary parenchymal infiltration could never be demonstrated. Since discharge the patient has been going to school and remains well.

The acid-fast bacilli isolated in culture from the specimen of pleural fluid obtained on May 22, before the patient had received any antibiotic treatment, were tested by Dr. Monroe Romansky at George Washington University School of Medicine and found to be resistant to 100 micrograms of streptomycin per cubic centimeter.

The probable source of J. Q. C.'s infection was T. B. M., a white man aged 57, who had been admitted to the Veterans Administration Hospital, Washington, D. C., in November 1946 with miliary pulmonary tuberculosis. A detailed case report of this patient may be found in the *Journal of Medical Sciences* (**216**:290 [Sept.] 1948). He was treated with streptomycin, 3 Gm. a day for seven days and then 1.8 Gm. a day for one hundred and sixteen days. Acid-fast organisms obtained from him before initiation of streptomycin therapy were sensitive to 0.3 microgram of streptomycin, but after four months of therapy a culture was found to be resistant to 500 micrograms of streptomycin. In spite of this, he recovered under this treatment and was clinically well with negative sputum one and a half years after discontinuance of streptomycin therapy. He left the hospital two months prior to the onset of symptoms in patient J. Q. C., who had cared for him as attendant during his illness.

### CONCLUSION

Infection with streptomycin-resistant tubercle bacilli may be expected to become more frequent as the number of streptomycin-treated patients increases. In this instance it is possible to trace the infection to exposure to a patient whose organisms became streptomycin resistant during the course of his treatment. His improvement may have been due to the streptomycin therapy but was probably merely coincidental or due to the presence of a mixture of sensitive and resistant organisms. Other patients primarily infected by streptomycin-resistant tubercle bacilli may show much less favorable courses. Particular effort should be made to prevent further instances of such transmission of streptomycin-resistant tubercle bacilli.

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This paper is published with the permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the authors.

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**Use of Animals.**—The dog, so long domesticated, the "friend of man," is in reality quite low in the comparative scale of intelligence rating and, perhaps because of this, behaves subserviently toward man as master to whom he may offer worshipful obedience. Domestic livestock, the hog and goat, used by man from time immemorial, rate distinctly higher in intelligence than the dog and cat; yet these superior animals are used as food for man.—Harry Beckman, M.D., and A. L. Tatum, M.D., On the Use of Animals for the Health of Man, *The Wisconsin Medical Journal, July 1949.*

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SATURDAY, AUGUST 20, 1949

## RECOMMENDED PRACTICES FOR CONTROL OF POLIOMYELITIS

The imminent threat of widespread infantile paralysis beyond that of previous years has led to the release of statements by specially developed conferences which may well serve as a guide to physicians and the public. The New York City Department of Health on July 25, 1949, emphasized that the incubation period is seven to fourteen days but may be as short as three days or as long as forty-five days. The disease may be spread by (1) contact through discharges from the oropharynx, (2) fecal discharges and (3) flies. Although flies may be contaminated with the virus, reliable evidence is lacking of the spread of poliomyelitis by insects, water, food or sewage. During an epidemic infection is highly prevalent, but only a limited number of cases are clinically identifiable. For every known case between 10 and 100 persons have inapparent infection. Examination of the spinal fluid is an important although not specific diagnostic procedure. The period of greatest communicability is the latter part of the incubation period and the first week of acute illness. At least three groups of strains of poliomyelitis virus are now known, and infection with any one of these may or may not render the person infected immune to attack from the other two. Susceptibility to infection is general. Thus far the known vaccines, drugs, serums or antibiotics are without specific value against the disease.

The expectancy with regard to permanent crippling at the time of onset indicates that about 50 per cent will ultimately emerge free, about 25 per cent will have mild physical limitations, about 15 per cent will have severe crippling and about 5 to 10 per cent will die. Pregnant women are probably not more susceptible to poliomyelitis than other persons. Children born to women who have poliomyelitis during pregnancy or labor are normal. Fatigue in the early stage of poliomyelitis may influence adversely the extent of paralysis. Children should be prevented from becoming overfatigued during the poliomyelitis season.

The National Conference on Recommended Practices for the Control of Poliomyelitis, sponsored by the National Foundation for Infantile Paralysis, Inc., met in Ann Arbor, Mich., in June 1949 and formulated the following statements with respect to the control of the disease: Poliomyelitis is a highly prevalent infection, and only a small fraction of the cases is clinically identifiable. In its recognizable form it is an acute illness, usually febrile, with early varying symptoms, but usually with headache and almost always a characteristic stiffness of the neck and spine. In about half such cases a lower neurone paralysis develops in the first few days of illness. Diagnosis depends on detection of a flaccid paralysis characteristically irregular in its involvement of muscle or muscle groups. The cerebral spinal fluid shows usually a moderate increase in cells of all types. The period of greatest communicability is covered by the latter part of the incubation and the first week of the acute illness. Isolation should be practiced for one week from the date of onset or the duration of fever if longer than one week. Nose and throat discharges and feces are infectious and should be disposed of as quickly and safely as possible. Quarantine has not been proved valuable in limiting the spread of the disease.

The following points are stressed among the recommended epidemic measures:

1. General notice to physicians of the prevalence or increase of incidence of the disease, description of usual characteristics of onset and necessity of diagnosis and medical care, particularly for bed rest, and information to the public at large on similar matters.
2. Isolation in bed of all children with fever pending diagnosis.
3. Education in such technic of bedside nursing as will prevent distribution of infectious discharges to others from patients isolated at home.
4. Postponement of elective nose or throat operations or dental extractions.
5. Avoidance of excessive physical strain.
6. Avoidance of unnecessary travel and visiting, especially of children, during high prevalence of the infection.

No international measures were recommended.

All obvious and suspected cases should be promptly reported and classified as paralytic or nonparalytic. Diagnostic criteria should generally include three or more of the following: (1) history compatible with poliomyelitis, (2) fever, (3) stiff neck and/or stiff back, (4) 10 to 500 cells per cubic centimeter of spinal fluid taken during the acute or early convalescent period, (5) spinal fluid protein elevated above normal limits and (6) demonstrable muscle weakness or paralysis. In cases in which there is only (1) a history compatible with poliomyelitis and (2) fever, the condition should be classified as presumptive or abortive poliomyelitis.

Patients with acute poliomyelitis are admissible to a general hospital if appropriate isolation precautions are employed. Isolation procedures used for the care of patients with acute poliomyelitis are similar to technics used in the hospital care of other communicable diseases. Patients may be cared for at home if home facilities and medically supervised care are adequate.

Public and private schools should not be closed during an outbreak of poliomyelitis nor their opening delayed except for specific reasons. Schools to which children are transported in buses from widely separated areas or boarding schools, excluding colleges and universities, should delay opening sessions if an outbreak of poliomyelitis exists in the area where the school is located. Summer camps should open as usual unless there is an outbreak of poliomyelitis in the area in which the camp is located. Places of recreation and amusement need not be closed; however, the attendance of children at such places should be discouraged.

These recommendations were motivated by the desire to avoid as far as possible the effect of disturbing or altering unnecessarily the normal pattern of life in the community. Whatever is done to upset the usual routine of children in a household or of adults in their habits is likely to bring more trouble than good as far as control of infantile paralysis is concerned.

## THE DEMAND FOR MORE BEDS FOR THE TUBERCULOUS

Tuberculosis is an infectious disease, and segregation in a sanatorium is recognized, notwithstanding the development of antibiotic treatment, as a potent protective measure against infectious open cases of tuberculosis. A recent editorial[1] in the official publication devoted to tuberculosis reviews requirements for beds in proportion to deaths from tuberculosis. Although originally advocated as chiefly valuable for patients, the sanatorium, even at an early date, was considered valuable in diminishing the spread of the disease. When the death rate was high and sanatoriums were few, institutionalization for every patient throughout the period of active disease was considered impractical. That patients should receive sanatorium care even during the last years of their lives was believed visionary. Gradually such goals have been recognized. In 1916, a ratio of one bed per annual death was followed shortly by one and a half beds per death, a proportion advocated for nearly a generation. By 1929 this appeared too low, and in 1940 a goal of two beds per death was set as a minimum. States having as many as three beds per death were believed to be more than adequately supplied. As the tuberculosis death rate declined, three to six beds were utilized, but this is still far below the ideal of care in a sanatorium for every patient with active tuberculosis throughout the period of infectivity. Now our hospitals and sanatoriums for tuberculosis are overcrowded with cases of advanced disease; probably ten beds per death are required for institutional segregation for every patient in the United States with active tuberculosis.

"Tuberculin tests and fluoroscopic and roentgenographic examination of entire populations and intensive study of contacts of known cases of tuberculosis will reveal nearly all instances of active 'open' tuberculosis with cavity, the form responsible for most of the spread of the disease." With recognition of this as the goal, the responsibility for a definite number of preventable deaths from tuberculosis is placed on any delay in achievement of the ratio of ten beds per death. Patients with closed, arrested and inactive disease may be cared for in dispensaries, in offices or in their homes. The "open" case has been a continuously controversial subject since the discovery of the tubercle bacillus, and ". . . any patient who is expectorating tubercle bacilli is a potential hazard to his community and under ideal conditions should certainly be segregated so that danger of his spreading the disease may be averted."

The goal of ten beds per death is laudable. Some may justifiably ask about the rules for segregation and spread of tuberculosis. Can regulations be formulated drastically and efficiently with knowledge of the nature of this disease? Execution was necessary with cattle, and unfortunately tuberculosis is not a lethal but a "cryptic" carrier disease. The economics are not one sided or simple. Who shall support this program? Are we becoming visionary or dealing in reality? The supply of beds, though important, may be subsidiary to the standard of living and rooms per capita. With adequate rooms and qualified medical and nursing supervision, why cannot the intelligent limited active patient be cared for at home, returning to the sanatorium or hospital for a few months when necessary, rather than be subjected to compulsory hospitalization for years on the assumption that all cases are contagious? This question will have to be answered definitely as costs and controls increase.

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[1] Ten Beds per Death or Eradication, Not Reduction of Tuberculosis, editorial, Am. Rev. Tuberc. 59: 707-709 (June) 1949.

## DR. PETER M. MURRAY, FIRST NEGRO MEMBER IN THE HOUSE OF DELEGATES

At the recent convention of the National Medical Association, leading Negro professional organization of the United States, Dr. George F. Lull, Secretary and General Manager of the American Medical Association, announced that a Negro physician, Dr. Peter M. Murray, has been elected by the New York State Medical Society to the House of Delegates of the American Medical Association. For twelve years Dr. Murray has been a member of the House of Delegates of the Medical Society of the State of New York. When Dr. Murray is seated in the House of Delegates at the San Francisco Convention of the American Medical Association in 1950, he will be the first Negro to serve as a member of this representative body.

Opponents of policies of the American Medical Association have charged frequently that Negro physicians have no opportunity in the Association. Any physician who is a member of his county medical society is also a member of the American Medical Association. The county medical societies have control over their own membership. Dr. Murray was elected by his colleagues in the New York State Medical Society House of Delegates. While Southern state medical societies have not customarily elected Negro physicians to membership, practically all Northern states have admitted reputable, duly licensed Negro physicians.

An invitation has been extended to licensed Negro physicians in the District of Columbia and to those who are members of the National Medical Association to attend sessions of the midwinter meeting of the American Medical Association. When Dr. Murray was asked by a reporter whether he would press for consideration of racial issues, he replied that he was elected as a representative from his medical society and would represent that membership.

## Current Comment

### CHRONIC IRRITATION AND CANCER

The concept of chronic irritation as one of the chief causative factors in human cancer retains wide acceptance. Experiences in occupational and experimental carcinogenesis, however, indicate increasingly that the agents that elicit cancerous reactions in man and animals are specific chemically and physically. Even apparently minor variations in the structure of chemical compounds may change a potent carcinogen into a noncarcinogenic chemical. Likewise, chronic irritative processes are not essential in carcinogenesis by specific chemical agents. Experimental as well as clinical observations indicate that chemical irritants may differ fundamentally in their action on the process of specific chemocarcinogenesis. While some of such nonspecific irritants apparently precipitate and accelerate development of cancer induced by specific carcinogens, others exert an inhibitory effect. Such differences may even be due partially to variations in the degree of the irritative action. While mild to moderate irritation, resulting in hyperemia and edema of the injured and carcinogenetically prepared tissues, not infrequently stimulates development of cancer, severe irritation sufficient to cause destruction of tissue may actually interfere with or impede this process. The concept of cancers resulting from chronic irritation is evidently based on the frequent coexistence of chronic inflammatory processes with precancerous and cancerous manifestations. Chronic cervicitis, chronic mastitis, chronic dermatitis following exposure to tar or roentgen rays and cirrhosis of the liver are considered conditions leading to cancer, and this supports the concept of carcinogenesis by nonspecific chronic irritation. However, there are experimental observations and particularly much clinical evidence to show definitely that chronic irritation as such is noncarcinogenic. Wherever cancerous processes are observed in chronically inflamed tissues a specific carcinogenic factor should be sought. In support of this concept as to the role of chronic irritation in carcinogenesis, cancers of the nasal sinuses are relatively rare although chronic sinusitis is one of the most common diseases. Chronic urethritis and chronic salpingitis also are rather frequently occurring diseases, while cancers of the male or female urethra and of the oviduct exhibit a conspicuously low rate of incidence. Recent studies of Carstam[1] have confirmed that hemorrhoids are not more frequent in cases with low cancer than in cases with tumors situated further up in the colon and are found with about equal frequency in patients with rectal or colonic cancers and in patients without intestinal cancer. Ashton[2] called attention to the fact that cancer of the cervix is rarely seen in the completely prolapsed uterus, although the cervix is subjected under such conditions to continuous physical and chemical irritation. Moreover, cancer is rarely seen in chronic crural ulcers. Finally, the development of cancer of the lung is seen with the inhalation of certain types of dust, fumes, vapors or gases (chromate, nickel carbonyl, tar, arsenic, radioactive agents and, perhaps, asbestos) but is not associated with the inhalation of others (silica, coal, cement). These observations suggest that greater efforts should be made in ascertaining specific causes of cancer which may be hidden behind common chronic irritative processes. Preventive control depends on the existence of such information. The conquest of infectious diseases was started only after the concept of a general miasma had been destroyed by the demonstration of specific causes.

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1. Carstam, N.: Hemorrhoids and Cancer, Acta chir. Scandinav. **97**: 71, 1948.
2. Ashton, D. L.: Carcinoma of the Cervix Complicating Procidentia Uteri, Am. J. Obst. & Gynec. **55**: 299, 1948.

# ORGANIZATION SECTION

## *Official Notes*

### DR. LULL AWARDED LEGION OF HONOR MEDAL

His activities on behalf of the French people immediately after World War II have won for General George F. Lull, former Deputy Surgeon General of the United States Army and now Secretary and General Manager of the American Medical Association, the coveted Legion of Honor medal from the French government. Formal presentation of the medal was made by Jean Joseph Viala, French Consul General, in Chicago Wednesday, July 27.

His appointment as Deputy Surgeon General of the United States Army in 1943 climaxed a career in Army medicine started in 1912, during which he served in all grades from lieutenant to major general. He was awarded the Distinguished Service Medal for his activities in World War II.

### BLOOD BANK CONFERENCE

There are approximately 1,513 blood banks in the United States according to the progress report of the American Medical Association's Committee on Blood Banks which met in Chicago, July 21.

Dr. Leonard W. Larson of Bismark, N. D., chairman of the Committee, and two members, Drs. H. P. Ramsey and W. D. Stovall of Washington, D. C., and Madison, Wis., acting as a subcommittee, met with representatives of the American Hospital Association, American Association of Blood Banks, American College of Surgeons, American Protestant Hospital Association, American National Red Cross, American Society of Clinical Pathologists, Catholic Hospital Association, College of American Pathologists and National Research Council. Most of the meeting was devoted to a detailed line by line examination of the proposed questionnaire which is to be sent to all of these blood banks during August by the Committee on Blood Banks. The questionnaire states that the survey is being made by the Committee on Blood Banks of the American Medical Association in cooperation with these nine other associations.

The Committee has been charged by the House of Delegates with the responsibility for making a survey of the blood bank situation in the United States with a view to appraising the quantity of the blood procured, processed and distributed as well as to formulate tentative plans for coordination of blood banks in any national emergency.

The following table presents the number of blood banks in each state reported at the meeting:

| | | | |
|---|---|---|---|
| Alabama | 24 | Nebraska | 10 |
| Arizona | 13 | Nevada | 1 |
| Arkansas | 10 | New Hampshire | 7 |
| California | 85 | New Jersey | 46 |
| Colorado | 15 | New Mexico | 4 |
| Connecticut | 26 | New York | 151 |
| Delaware | 4 | North Carolina | 40 |
| District of Columbia | 12 | North Dakota | 7 |
| Florida | 28 | Ohio | 86 |
| Georgia | 28 | Oklahoma | 15 |
| Idaho | 8 | Oregon | 13 |
| Illinois | 97 | Pennsylvania | 112 |
| Indiana | 31 | Rhode Island | 9 |
| Iowa | 32 | South Carolina | 12 |
| Kansas | 37 | South Dakota | 10 |
| Kentucky | 22 | Tennessee | 31 |
| Louisiana | 20 | Texas | 50 |
| Maine | 7 | Utah | 7 |
| Maryland | 32 | Vermont | 6 |
| Massachusetts | 78 | Virginia | 32 |
| Michigan | 69 | Washington | 21 |
| Minnesota | 25 | West Virginia | 24 |
| Mississippi | 17 | Wisconsin | 33 |
| Missouri | 54 | Wyoming | 1 |
| Montana | 11 | TOTAL | 1,513 |

The nine cooperating agencies were represented by: Dr. Albert M. Wolf, American Association of Blood Banks; Drs. Charles F. Branch and H. P. Saunders, American College of Surgeons; Mr. Maurice Norby, American Hospital Association; Reverend Joseph A. George, American Protestant Hospital Association; Drs. G. F. McGinnis, Ross T. McIntire and Herbert Brown, American National Red Cross; Dr. Larson, American Society of Clinical Pathologists; Reverend James V. Moscow, Catholic Hospital Association; Dr. M. G. Westmoreland, College of American Pathologists, and Dr. E. L. DeGowin, National Research Council.

### POPULARITY PRIZE WINNER (ART)

During the recent annual session of the American Medical Association in Atlantic City, the winner of the popularity prize offered by the American Physicians Art Association was no. 289B, "Midnight Report" (oil) by Dr. Irving L. Kohn, New York. The runners up were 406A, "New England Coast" (oil) by Dr. H. B. Mussina Williamsport, Pa.; 371A, "Central Park South — The Witching Hour" (oil) by Dr. M. M. Melicow, New York, and 256A, "The Bride" (oil) by Dr. James C. Janney, Wellesley, Mass.

## *Washington Letter*

*(From a Special Correspondent)*

Aug. 15, 1949.

### Capitol Tempo Stepped Up on Health Legislation

As Congress entered on what was expected to be the last month of its present lengthy session, bipartisan efforts were redoubled to achieve enactment of several important bills of national significance affecting medicine and allied professions. The first ten days of August, for example, witnessed the following developments:

Passage by the Senate of a bill (S. 614) amending the Hill-Burton hospital construction act by doubling the federal contribution to $150,000,000 annually and otherwise liberalizing the law.

Favorable action by Senate Labor and Public Welfare Committee on S. 1453, federal aid to medical schools with provision for a scholarship system. Enactment of this measure by both branches of Congress and approval by the President is considered probable.

Approval by the House subcommittee on health legislation of its own bill (H. R. 5903) amending the Hill-Burton act, and which is substantially the same as S. 614. Also, subcommittee approval of a revised bill (H. R. 5865) on federal aid to local public health units. This bill likewise is similar to S. 522, and its chances of passage by the Senate are considered good.

Other legislation, less broad in scope, which advanced on the road toward enactment during the same period included S. 2160, passed by the Senate, which gives commissioned personnel of U. S. Public Health Service leave privileges comparable with those enjoyed by Army and Navy officers; H. R. 5324, increasing salaries of medical and certain other professional personnel in Veterans Administration, on which public hearings were held by the House Veterans Committee, and H. R. 5940, a companion bill to the Senate bill on aid to medical education, which is under committee consideration.

### Legion Endorses Higher Salaries for VA Doctors

At public hearings August 9 on H. R. 5324, the Allen bill on increasing salaries of physicians, dentists and nurses in Veterans Administration, in all professional grades, supporting testimony was presented by spokesmen for the American Legion. Witnesses were T. O. Kraabel, director of the Legion's National Rehabilitation Commission, and Dr. Hyman David Shapiro, senior medical consultant.

At several junctures in the hearing, Chairman John E. Rankin (Dem., Miss.) of the House Committee on Veterans Affairs made short statements expressing criticism of certain medical practices and trends in professional education. This country needs more doctors of the "horse and buggy" type, he asserted. Younger physicians, particularly psychiatrists, came in for generalized criticism at the hands of the committee chairman. Apropos of doctor shortages in certain areas of the country, Rankin said:

"The making of a closed shop of the medical profession has done infinite harm and I'm going to try to do something about it."

At one point during testimony by Dr. Shapiro, who is a psychiatrist, Representative Rankin interrupted to say: "What the Veterans Administration needs is doctors, not psychiatrists."

Later the same day, the Mississippian introduced bills authorizing construction of a 200 bed veterans hospital at Tupelo and another of the same size at Mound Bayou.

### Josephine Roche Reports on Miners' Medical Program

Milestones in the medical and hospital program of the United Mine Workers Welfare and Retirement Fund were described to the Senate Banking and Currency Committee on August 1 by Miss Josephine Roche, director of the Fund.

Expenditures for the health program totaled $4,761,071 during the last twelve months, Miss Roche testified, providing hospital and medical care for 26,480 miners and dependents. She credited the cooperation of national, state and local medical organizations, medical schools and the profession generally for a large measure of the success that has been achieved in getting the program off to a sound start.

"That this program has moved ahead so steadily and constructively is due to the careful consideration and circumspection given each minute detail and problem and to each step before it is taken," Miss Roche said. "Also greatly contributing to its growing success are the constantly available advice and consultations, the cooperation and interest coming to us from preeminent physicians and surgeons and from leading medical organizations and institutions of the nation."

### Humphrey's Minority Report Demands Department of Welfare

On August 10, which was the Wednesday preceding the Senate vote on establishment of a Department of Welfare, Senator Huber H. Humphrey (Dem., Minn.) issued a twenty-four page minority report designed to lessen opposition to the reorganization plan. He was a member of the Senate Expenditures Committee group of four who voted against the McClellan resolution expressing disapproval of the plan for a new executive department.

Vehemently denouncing the educational campaign of the American Medical Association, Humphrey said it was responsible for the adverse vote in committee and charged that if the plan "is killed because of the opposition of one lobby on behalf of a small group that is not even affected by it except in imagination, then we shall have offered proof that a democratic government cannot order its own affairs effectively. This is the test."

The Humphrey statement was given nationwide circulation not only through the press and the Senator's office but also through Federal Security Agency, Committee for the Nation's Health and other organizations sympathetic to compulsory health insurance and establishment of a Department of Welfare.

### June Figures on Veterans Care Program Disclosed

Physicians participating in the Veterans Administration "home town" medical care program gave 61,991 medical examinations on a fee basis during the month of June, according to the latest VA report. A total of 37,804 patients received the examinations. Treatments during the same period numbered 222,974, administered to 67,454 patients. The cost for examinations and treatments averaged $7.92 and $4.13, respectively.

### $2,056,426 in Federal Research Grants Announced

Federal Security Agency has announced the award of $2,056,426 in grants for continued support of two hundred and seventeen medical and allied research projects under way in ninety-four institutions. They comprise chiefly medical schools, universities and hospitals in thirty-one states, the District of Columbia, Alaska, Canada, Denmark, Norway and Guatemala. Awards for new projects are still being withheld, pending possible action by Congress reducing appropriations of Public Health Service and other government agencies. The projects include studies of deafness and speech defects, peptic ulcers, the common cold, relation of the endocrine glands to aging, changes induced in the living cell by irradation, the longevity and behavior of pathogenic bacteria in frozen food, and the viability of enteric bacteria in sea water and factors controlling the fate of sewage after discharge in the sea.

### Poliomyelitis Epidemic is Subject of New York Conference

A New York conference August 9-10 between Children's Bureau doctors and staff members of the National Foundation for Infantile Paralysis was announced August 5 by Federal Security Administrator Oscar R. Ewing. How to make public and private funds go the farthest in fighting poliomyelitis was to be the subject of the conference.

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## Coming Medical Meetings

Aero Medical Association, New York, Aug. 29-Sept. 2. Dr. Thomas H. Sutherland, 214 S. State St., Marion, Ohio, Secretary.
American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 9-14. Dr. W. L. Benedict, 100 First Avenue Bldg., Rochester, Minn., Secretary.
American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., The Homestead, Sept. 8-10. Dr. Leroy A. Calkins, University of Kansas Medical Center, Kansas City 3, Kan., Secretary.
American Congress of Physical Medicine, Cincinnati, Netherlands Plaza Hotel, Sept. 6-10. Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secretary.
American Hospital Association, Cleveland, Sept. 26-29. Mr. George P. Bugbee, 18 East Division St., Chicago, Executive Secretary.
American Roentgen Ray Society, Cincinnati, Oct. 4-7. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Iowa, Secretary.
American Society of Clinical Pathologists, Chicago, Drake Hotel, Oct. 11-15. Dr. C. G. Culbertson, 740 S. Alabama St., Indianapolis, Secretary.
Colorado State Medical Society, Denver, Shirley-Savoy Hotel, Sept. 20-23. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver, Executive Secretary.
Delaware, Medical Society of, Wilmington, Oct. 13-16. Dr. W. Edwin Bird, 822 North American Bldg., Wilmington, Executive Secretary.
Gulf Coast Clinical Society, Pensacola, Fla., Oct. 6-7. Dr. Arthur J. Butt Jr., Pensacola, Fla., Secretary.
Indiana State Medical Association, French Lick, Sept. 25-27. Mr. Ray E. Smith, 1021 Hume-Mansur Bldg., Indianapolis 4, Executive Secretary.
International Congress of Biochemistry, Cambridge, England, Aug. 19-25. Lieut. Col. Francis J. Griffin, 56 Victoria St., London, W.C.1, Organizer.
International Neurological Congress, Paris, France, Sept. 5-10. Dr. Raymond Garcin, 19 rue de Borgogne, Paris, General Secretary.
Kansas City Southwest Clinical Society, Kansas City, Mo., Municipal Auditorium, Oct. 3-6. Dr. W. Merritt Ketcham, 630 Shukert Bldg., Kansas City, Mo., Secretary.
Kentucky State Medical Association, Owensboro, Oct. 6-9. Dr. Bruce Underwood, 620 S. Third St., Louisville 2, Secretary.
Michigan State Medical Society, Grand Rapids, Pantlind Hotel and Civic Auditorium, Sept. 21-23. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.
Mississippi Valley Medical Society, St. Louis, Jefferson Hotel, Sept. 28-30. Dr. Harold Swanberg, 209-224 W. C. U. Bldg., Quincy, Ill., Secretary.
Nevada State Medical Association, Elko, Sept. 29-Oct. 1. Dr. Roland W. Stahr, 118 California Ave., Reno, Secretary.
Northern Minnesota Medical Association, Alexandria, Sept. 9-10. Dr. C. L. Oppegaard, Crookston, Secretary.
Oregon State Medical Society, Eugene, Oct. 12-15. Dr. Werner E. Zeller, Medical-Dental Bldg., Portland 5, Secretary.
Pennsylvania, Medical Society of the State of, Pittsburgh, Hotel William Penn, Sept. 26-29. Dr. W. F. Donaldson, 8104 Jenkins Arcade, Pittsburgh 22, Secretary.
Southern Minnesota Medical Association, Red Wing, Sept. 12, Dr. W. A. Merritt, Rochester, Secretary.
Southwestern Surgical Congress, Houston, Tex., Shamrock Hotel, Sept. 26-28. Dr. C. R. Rountree, 525 N.W. Eleventh St., Oklahoma City 3, Secretary.
Utah State Medical Association, Salt Lake City, Sept. 1-3. Dr. Ray T. Woolsey, 42 S. Fifth East St., Salt Lake City 2, Secretary.
Vermont State Medical Society, Burlington, Sept. 8-9. Dr. James P. Hammond, 542 Main St., Bennington, Secretary.
Virginia, Medical Society of, Fort Monroe, Old Point Comfort, Oct. 9-12. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond ,Sechetary.
Washington State Medical Association, Seattle, Olympic Hotel, Sept. 11-14. Dr. James W. Haviland, 338 White-Henry-Stuart Bldg., Seattle, Secretary.
Wisconsin, State Medical Society of, Milwaukee, Hotel Shroeder and Milwaukee Auditorium, Oct. 3-5. Mr. Charles H. Crownhart, 704 E. Gorham St., Madison, Secretary.
World Medical Association, General Assembly, London, Eng., Oct. 10-15. Dr. Louis H. Bauer, 2 E. 103d St., New York City, Secretary General.
Wyoming State Medical Society, Casper, Sept. 12-14. Dr. George H. Phelps, 1606 Capitol Avenue, Cheyenne, Secretary.

# GOVERNMENT SERVICES

## SECRETARY OF DEFENSE

### ASSISTANT FOR CIVIL DEFENSE LIAISON

Establishment of the position of Assistant for Civil Defense Liaison in the Office of the Secretary of Defense was announced with the appointment of Lieut. Col. Barnet W. Beers to this position.

The creation of this new staff position results primarily from the necessity of assuring effective coordination of National Military Establishment activities which are closely related to civil defense with the activities of those civilian government agencies which have been made responsible for civil defense planning as such. The ultimate objective is to make certain that planning and preparations for civil defense are properly related to planning and preparations for military defense and that each complements the other.

Colonel Beers had been executive assistant in the National Military Establishment Office of Civil Defense Planning since it was first established, on March 27, 1948. This office has been abolished, and its files and remaining personnel have been transferred to the Assistant for Civil Defense Liaison.

## ARMY

### ARMY MEDICAL DEPARTMENT SENDS CONSULTANTS TO FAR EAST

A team of consultants, including three civilians and one Army physician, left Washington August 3 for a thirty-five day trip to the Far East Command under the Army's Civilian Consultants Program.

Representing the Army is Col. Warner F. Bowers, Chief, Surgical Consultants Division, Surgeon General's Office. The civilian consultants are Dr. Henry H. Kessler (orthopedics) of Newark, N. J.; Dr. Bruce Webster (internal medicine), New York, and Dr. Russell N. DeJong (neuropsychiatry), Ann Arbor, Mich.

The consultants will visit all Army hospitals in the Far East Command, including Japan, the Philippines, Okinawa and Guam. The Japanese Medical Society has arranged a reception in Tokyo at which Colonel Bowers will be the honor guest.

### ROTC CADETS BEGIN TRAINING COURSE

Approximately 100 ROTC cadets from ten medical colleges began a six week training course on August 1 at the Army Medical Center in Washington, D. C.

The cadets will receive one week of military instruction and five weeks of on-the-job training in the various phases of military medicine. They will be assigned to their preferred field of medicine and will observe the technic of Army doctors at Walter Reed General Hospital.

The students are all in their third year of medical college at the following schools: University of Pennsylvania, New York University, Yale University, Tufts School of Medicine, Harvard University, Boston University, Cornell University, Hendricks College in Conway, Ark., and Jefferson School of Medicine in Philadelphia. The cadets are all veterans of World War II and are attending their respective schools under the GI Bill of Rights.

### ADVANCED TRAINING

Fifteen Army Medical Department officers have recently been accepted for advanced training by civilian institutions. Included are three lieutenant colonels, six majors and six captains, representing the Medical, Veterinary, Medical Service and Army Nurse Corps. They are: Lieut. Col. Benjamin H. Sullivan Jr., MC, for training in clinical gastroenterology at the University of Pennsylvania, Philadelphia; Lieut. Col. Edward J. Doyle, MC, for training in surgical anatomy at Tufts College Medical School, Boston; Lieut. Col. James A. Wier, MC, for a course in diseases of the endocrines at Michael Reese Hospital Postgraduate School, Chicago; Major Neil G. MacEachern, VC, for training in Public Health at Johns Hopkins University, Baltimore; Major Jewell Derryberry, Major Martha C. Habib, Major Bernice Hill, Major Peggy G. Carbaugh, Major Frances Lay, Capt. Helen L. Tucker, Capt. Frances P. Thorp and Capt. Katherine Ball, all of Army Nurse Corps, for training in nursing education at the University of Minnesota School of Nursing, Minneapolis; Capt. Maxwell A. Cook, MSC, for training in psychiatric social work at the University of North Carolina, Chapel Hill; Capt. Marvin D. Blackburn Jr., MC, for training in pathology at St. Paul's Hospital, Dallas, Texas, and Capt. Carl B. Richey, MC, for training in internal medicine at Syracuse University, Syracuse, N. Y.

### ARMY ANNOUNCES COURSE IN PSYCHOTHERAPEUTIC MEDICINE

The Army Surgeon General has announced a two week course of instruction in the principles of psychotherapeutic medicine. In view of the acute shortage of psychiatrists in the armed forces, the course is designed to enable nonpsychiatrists to meet psychiatric problems in part.

Hospitals at which the course will be given and the beginning and terminating dates are as follows: Fitzsimons General Hospital, Denver, August 29-September 10; Letterman General Hospital, San Francisco, September 5-17, and Walter Reed General Hospital, Washington, D. C., August 29-Septmeber 10. The reporting date in each case is two days in advance of the beginning date. All class II installations have been allotted space.

The Surgeon General requests that, insofar as practicable, addressees make every effort to insure the assignment of key Medical Corps officers (chiefs and assistant chiefs of services) of the command, since each officer selected for training will be requested to disseminate the information gained in the course to the medical officers of his assigned station who are nonpsychiatrists. Medical officers who are trained psychiatrists will not be selected for this course.

Addressees will submit through channels the name, grade, serial number, military occupational specialty and duty assignment of each selected officer to: The Surgeon General, Department of the Army, Attention: Chief, Education and Training Division, for receipt not later than Aug. 19, 1949.

### SURGEON GENERAL'S OFFICE

Lieut. Col. C. A. McAllister, MSC, departed August 8 for duty in Japan. Colonel McAllister has been assigned to the Office of the Surgeon General since December 1948, as assistant chief, Operations Branch, Medical Plans and Operations Division.

Prior to this tour of duty he served in Japan from 1946 as operations officer, Medical Section, 8th Army, with headquarters in Yokohama.

Lieut. Col. Ernest T. Sheen, MSC, has been named as successor to Colonel McAllister. Colonel Sheen's last assignment was in Headquarters, 4th Army, Fort Sam Houston, Texas.

### ARMED FORCES INSTITUTE OF PATHOLOGY

Six ROTC medical students have been assigned to temporary duty at the Armed Forces Institute of Pathology from the summer camp at Walter Reed General Hospital. Three have been assigned to the Department of Pathology, where they are assisting individual pathologists in their work, and three have been assigned to the Army Museum to inventory and catalog anatomic specimens.

# PHYSICIANS SEPARATED FROM SERVICE

## ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

### Arizona

| | |
|---|---|
| Donnell, R. E. Jr | Phoenix |
| Faulk, Murl Edmund Jr | Glendale |
| Friedlander, H | Phoenix |
| Hendrix, Thomas Love | Phoenix |
| Soto, Bernard | Douglas |

### California

| | |
|---|---|
| Bick, J. A | San Francisco |
| Bowers, R. E | Los Angeles |
| Brother, P. R | Los Angeles |
| Clay, J. B | La Mesa |
| Colyear Bayard H. Jr | San Francisco |
| Cook, Edward William | San Rafael |
| Daniels, D. D | Gardena |
| Donnell, G. N | Long Beach |
| Dykes, J | Taft |
| Fletcher, Grant | Kentfield |
| Flynn, Philip T | San Francisco |
| Freeman, D. G | Pasadena |
| Gilbert, Fred Ivan Jr | Oroville |
| Herman, Lawrence Melvin | Los Angeles |
| Hiler, E. G | Downey |
| Holtz, Marvin Jay | Long Beach |
| Johnson, Alan J | Los Angeles |
| Lawley, T. B | San Francisco |
| Loge, J. P | Redlands |
| Mallia, J. J | Los Angeles |
| Markham, J. W | North Hollywood |
| Morton, M. C | San Jose |
| Mullen, R. C | San Jose |
| Nelson, Thomas L. Jr | Berkeley |
| Oliver, W. F | Santa Barbara |
| Osgood, Lyle E | Inglewood |
| Paxton, G. A | San Diego |
| Peacock, James F | Inglewood |
| Polito, Salvatore R | Hollywood |
| Purdy, Everett K | Los Angeles |
| Rosenquist, Robert C | Los Angeles |
| Rosokoff, J | Berkeley |
| Schachner, H | San Francisco |
| Sidders, William A | Placerville |
| Smith, W. M | San Diego |
| Stephenson, M. L. Jr | Oakland |
| Strawn, D. A | Riverside |
| Susnow, E. S | San Rafael |
| Sweeny, J. L | San Francisco |
| Temkin, Eugene | Los Angeles |
| Waters, Philip Cook | Glendale |
| Zehm, A. C | Los Angeles |

### Colorado

| | |
|---|---|
| Campbell, Bernard E | Denver |
| Dowding, Charles H. Jr | Windsor |
| Elzi, E. P | Denver |
| Everett, Ernest Frank Jr | Fowler |
| Gilliland, J. M | Fort Collins |
| Hix, I. E. Jr | Denver |
| Howlett, L. U | Golden |
| Reitemeier, Richard J | Pueblo |
| Small, D. F | Rocky Ford |
| Thode, H. P. Jr | Denver |

### Connecticut

| | |
|---|---|
| Boettger, Alfred Oscar | Hamden |
| Boynton, R. D | North Haven |
| Daly, J. E | Waterbury |
| Gaskell, A | Hartford |
| Good, P. S | Waterbury |
| Harned, H. S. Jr | Hamden |
| Howe, Edward R | West Hartford |
| Lamont, J. H | Washington |
| McFarland, W. J | Glenbrook |
| Mancinelli, M. J | Stamford |
| Maresca, R. L | New Haven |
| Molumphy, Paul E | West Hartford |
| Pepe, Vincent | New Haven |
| Sheiman, S. C | Bridgeport |
| Sokolski, Edward John | Bridgeport |
| Spannaus, F. C. Jr | Danbury |
| Tella, R. T | Stamford |
| Wasserman, Edward | Bridgeport |

### District of Columbia

| | |
|---|---|
| D'Angelo, J. P | Washington |
| Kimble, S. T. Jr | Washington |
| Longfield, A. N | Washington |
| McDonald, J. J | Washington |
| Palmer, R. E | Washington |
| Parrish, A. E | Washington |
| Simpson, William F. Jr | Washington |
| Stone, Thomas E | Washington |

### Florida

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|---|---|
| Hopkins, George C. Jr | St. Augustine |

### Georgia

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|---|---|
| Askew, William A | Arlington |
| Foster, Henry A | Franklin |
| Harrod, John P. Jr | Townsend |
| Hortman, Hobart C. Jr | Cuthbert |
| Jarrell, Floyd C. Jr | Butler |
| Otto, Walter W | Savannah |
| Shanks, Edgar D. Jr | Atlanta |
| Spier, Eugene | LaGrange |

### Idaho

| | |
|---|---|
| David, Kirk Jamieson | Moscow |
| Johnson, C. C | Grand View |
| Monk, Robert S | Boise |
| Sloat, J. E | Jerome |

### Illinois

| | |
|---|---|
| Barrash, Meyer J | Chicago |
| Cohen, J. A | Chicago |
| Cook, R. E | Chicago |
| Coriden, T. L | Ottawa |
| Erikson, R. E | Moline |
| Fogelman, M. J | Chicago |
| Frederick, W. E | Maywood |
| Garvin, J. S | Windsor |
| McClanathan, D. E | Freeport |
| McDermott, George A | Chicago |
| McDonnell, John J | Sterling |
| Nystrom, Robert E | Peoria |
| Pearson, Paul H | Eureka |
| Powell, C. B | Chicago |
| Powers, G | Streator |
| Pugh, William E | Peoria |
| Ralston, L. S | Kankakee |
| Ritchey, H. Mc | Rushville |
| Seto, M. R | Chicago |
| Shewmake, F. F | Chicago |
| Shore, N. M | Chicago |
| Sloan, W. E | Robinson |
| Spitze, E. C. Jr | E. St. Louis |
| Splitter, S. D | Chicago |
| Sweet, Arthur | Chicago |
| Tatarowicz, B. J | Chicago |
| Tausig, T. N | Chicago |
| Taylor, A. B | Wilmette |
| Thometz, J. J | Chicago |
| Traisman, Howard S | Chicago |

### Iowa

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|---|---|
| Hardin, Wayne B | Des Moines |

### Kansas

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|---|---|
| Rhoades, Arthur B | Merrian |

### Kentucky

| | |
|---|---|
| Anderson, S. J | Louisville |
| Conley, Lyndon M | Hazard |
| Crafton, George B | Fulton |
| Cunningham, Guy C | Ludlow |
| Eubank, William P | Oakland |
| Freedman, J. R | Louisville |
| Fristoe, John W. Jr | Mayfield |
| Hicks, S. M | Hazel |
| Keen, H | Bowling Green |
| Keith, D. Y. Jr | Louisville |
| Lee, M. J. Jr | Danville |
| Manuel, Donald C | Louisville |
| Pope, C. L | Harlan |
| Sewell, W. H | Jackson |

### Rhode Island

| | |
|---|---|
| Duffy, F. P | Cranston |
| Ferris, J. A | Cranston |
| Hager, Russell Perry | Providence |
| Porter, George Edward | Providence |
| Olstad, Robert B | Providence |

### South Carolina

| | |
|---|---|
| Anthony, S. H | Greenville |
| Donato, Henry | Mount Pleasant |
| Hamilton, W. H. Jr | Charleston |
| McLawhorn, Walter R. Jr | Greenville |

### South Dakota

| | |
|---|---|
| Gillis, F. D. Jr | Mitchell |
| Mayer, Roland M | Aberdeen |
| Storsteen, Kenneth Andrew | Webster |

### Tennessee

| | |
|---|---|
| Benton, Benjamin F | Memphis |
| Piggott, Jack D | Memphis |
| Shelton, Norris | Jackson |

### Texas

| | |
|---|---|
| Adams, Julius | Houston |
| Alexander, Jack Owen | Dallas |
| Betts, William A. Jr | Austin |
| Carmignani, Amedeo E | Galveston |
| Chriss, J. W | Corpus Christi |
| Cummins, E. J. Jr | El Paso |
| Daeschner, Charles W. Jr | Houston |
| Darwin, Lloyd K. Jr | Dallas |
| Davis, Glenn Earl | Galveston |
| Dow, Antonio | El Paso |
| Fitzpatrick, Jack C | Dallas |
| Hooker, L. T | Houston |
| Krempin, Herman O | San Angelo |
| Lasky, Harold Julius | Galveston |
| Levenson, Sydney T | El Paso |
| McDonald, Henry C. Jr | Dallas |
| Major, J. W | Bowie |
| Mann, M. D | Brady |
| Patterson, T. V | Decatur |
| Pratt, F. H | Del Rio |
| Purnell, G. W | Angleton |
| Reynolds, G. A | El Paso |
| Sansom, Altus Bishop | Lubbock |
| Sappington, T. B. Jr | Port Arthur |
| Schuleman, I. H | Houston |
| Skrivanek, D. A | Caldwell |
| Sloan, J. W | McAllen |
| Smith, C. L | Dallas |
| Smith, William G | Port Lavaca |
| Snider, J. D | Lubbock |
| Tinsley, W. H | Luling |
| Tips, E. F | Seguin |
| Thornton, Melvin L | Littlefield |
| Tobolowsky, D | Dallas |
| Watson, Thomas D. Jr | Center |

### Utah

| | |
|---|---|
| Child, S. R | Salt Lake City |
| Kimball, F. H | Salt Lake City |
| Liddell, Thomas Blair | Ogden |
| Reiser, Albert Hamer Jr | Salt Lake City |
| Rigby, D. C | Fairview |

### Virginia

| | |
|---|---|
| Baylor, Richard N | Richmond |
| Justis, Homer R | Lynchburg |
| Mirmelstein, Alvin B. H | Newport News |
| Re Mine, Philip G | Richmond |
| Turner, Franklin C | Richmond |

### Washington

| | |
|---|---|
| Adams, Samuel E | Shelton |
| Pratum, Leif K | Seattle |

### West Virginia

| | |
|---|---|
| Ebbert, Arthur | Wheeling |
| Klein, Harvey S. Jr | Huntington |
| Love, John A | Moorefield |
| Perry, John L. Jr | Harpers Ferry |

# Medical News

**(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)**

## ARIZONA

**Brooks Clinical Conference.**—The Harlow Brooks Memorial Navajo Clinical Conference will be held at Sage Memorial Hospital, Ganado, August 22-24. Out of state speakers include:

Henry M. Benning, Santa Barbara, Calif., Indications, Doses and Effects of Newer Antibiotics in Chronic Infections.
Harvey E. Billig Jr., Los Angeles, Factors in Essentials of Mobilization of the Human Body.
E. Forrest Boyd, Los Angeles, Report of a Case of Full Term Pregnancy Following Patent Ductus Ligation.
Felix Cunha, San Francisco, Case Histories in Gastroenterology.
Alfred E. Gallant, Los Angeles, And Now to Live.
L. Dale Huffman, Hollywood, Calif., Anticoagulants and Myocardial Infarction.
William R. Lovelace II, Albuquerque, N. Mex., Place of Radioactive Isotopes and Surgery in the Treatment of a Patient with Hyperthyroidism.
Malcolm T. MacEachern, Chicago, Patients, Doctors and Hospitals.
Joseph F. Montague, New York, Painless Proctology.
Thomas B. Noble Jr., Indianapolis, A Satisfactory Treatment of Acute Generalized Peritonitis with Multiple Intestinal Obstructions.
Daniel P. Quiring, PH.D., Cleveland, Human Types.
James P. Rigg, Grand Junction, Colo., Migraine.
Carl F. Rusche, Hollywood, Calif., Ureterosigmoid Anastomosis.
Buell H. Sprague, Hollywood, Calif., Thyroid Pathology Illustrated.
Ernest E. Tippin, Wichita, Kansas, Servicing Nature's Air Conditioner.

## CALIFORNIA

**Blood Bank Irradiates Plasma.**—Irwin Memorial Blood Bank, San Francisco, announced June 24 at its eighth anniversary that it is inaugurating a plan whereby plasma from the blood bank will be irradiated. It will be available for distribution by August 1. The new technic is to eliminate homologous serum jaundice. The sterilizing technic is not applicable to whole blood.

**Courses for Practicing Physicians.**—Stanford University School of Medicine, San Francisco, in cooperation with the San Francisco Department of Public Health and the San Francisco Hospital will present the following postgraduate medical courses for practicing physicians September 19-23: general surgery, internal medicine, dermatology, fractures, surgical anatomy and operative technic, laboratory diagnosis, endocrinology, surgical specialties, anesthesiology and clinical ophthalmology. The fee for registration, which closes September 1, is $75, payable to the Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15.

## COLORADO

**Seminar in Forensic Medicine.**—A series of seminars comprising an intensive review of medicolegal subjects will be conducted under the joint sponsorship of the University of Colorado School of Medicine, Denver, and the Office of the Medical Examiners of the City and County of Denver, September 23 and 24. The course offers lectures on medicolegal subjects which are of interest to all officials investigating the cause and manner of all obscure and violent deaths. Lecturers are, for the most part, persons actively engaged in the investigation of deaths and violence. The course is open to all coroners, coroner's physicians and prosecutors. There will be a registration fee of $10. Physicians who occasionally perform medicolegal autopsies and who may be interested in medicolegal work may register for these seminars. Additional information may be obtained from the Director of Graduate and Postgraduate Medical Education, University of Colorado School of Medicine, Denver.

## ILLINOIS

**To Prosecute Quack Doctors.**—The director of the State Department of Registration and Education, Noble J. Puffer, has notified his chief investigator to speed up prosecution against quack doctors operating in Chicago. As a result of a series of articles in the Chicago Tribune exposing medical quackery, thousands of inquiries have been received from readers who have been duped by the quacks. The department has also been conducting an investigation and will take prompt action in serving warrants and revoking licenses.

### Chicago

**Special Society Election.**—At the annual meeting of the Chicago Gynecological Society June 17 the following officers were elected: Dr. Eugene A. Edwards, president; Dr. John I. Brewer, president-elect; Dr. Edward M. Dorr, secretary, and Dr. Fred O. Priest, treasurer.

**War Memorial.**—A bronze plaque commemorating service and sacrifice will be erected as a war memorial at the 808 South Wood Street entrance of the University of Illinois' Chicago Professional Colleges. The plaque was recommended by a specially appointed War Memorial Committee. A War Memorial Fund of $1,300 will be used for the preparation of the plaque. The remainder of the fund will be used for the purchase of books related to military subjects.

**Magazine Racket.**—The Chicago Medical Society warns all doctors in the Chicago area to beware of two men who are attempting to launch a campaign for magazine subscriptions for which they do not have authority. The offer proposes purchase of a three year subscription to Newsweek and Clinical Medicine for $31.20, two of the following magazines then being supplied without charge: Coronet; Eye, Ear, Nose and Throat Monthly; Holiday; Judy's; Magazine Digest, and Nature Magazine. A deposit of $9 is requested, the balance to be mailed to Physicians Reception Service, 502 South Michigan, Chicago.

**Symposium on Plasma Proteins.** — A symposium on plasma proteins, sponsored by the Robert Gould Research Foundation, will be given under the auspices of the University of Illinois College of Medicine September 23 and 24 at the university. The symposium is designed to promote research and understanding of the subject. Sixteen prominent speakers will present aspects of the plasma proteins, such as formation, fractionation, immunologic and endocrine relationships, hypoproteinemia, relation to edema, isotope tracer studies and relation to the liver. One hundred and seventy-five guests who are interested in the subject have been invited to attend. The Robert Gould Research Foundation of Cincinnati is a nonprofit institution the activities of which are dedicated to public health and welfare. At the present time the foundation is devoting its funds primarily to the support of scientific research in the field of animal and human nutrition. The symposium on plasma proteins will be the second sponsored by the foundation. In October 1947 it supported a symposium on nutritional anemia, given under the auspices of the University of Cincinnati College of Medicine.

## INDIANA

**Dr. Badertscher Retires.**—Jacob A. Badertscher, Ph.D., professor of anatomy at Indiana University School of Medicine, Bloomington-Indianapolis, since 1914, will retire at the end of the summer school session, having reached the compulsory retirement age. He was given a farewell banquet in May that was attended by more than 300 of his former students. Dr. Badertscher has also been assistant dean at the medical school, where he will continue his research work.

**State Association Centennial Year.**—Dr. Augustus P. Hauss, president of the Indiana State Medical Association, has announced that the organization will celebrate its centennial anniversary at the annual meeting September 26-29. "The founding of the medical association in 1849 coincides with the birth of James Whitcomb Riley, Hoosier poet, who wrote numerous poems about physicians," said Dr. Hauss, "and the medical profession will honor his memory during our centennial meeting." Dr. Hauss has appointed Dr. Thurman B. Rice, Indiana University School of Medicine, Indianapolis, chairman of a committee to assemble a special historical exhibit.

## LOUISIANA

**University Appointments.**—The following appointments have been made to the Tulane University of Louisiana School of Medicine, New Orleans, for the 1949-1950 school year. Dr. Ernest Kun, instructor in pharmacology at the University of Chicago, and Dr. Nathaniel B. Kurnick, Karolinska Institute, Stockholm, Sweden, have been appointed assistant professors of medicine. Dr. Samuel Barkoff, senior psychiatrist at the Springfield State Hospital, Sykesville, Md., has been named associate professor of bacteriology.

**Grant to Further Psychiatric Program.**—A three year grant of $20,000 annually from the Edward G. Schlieder Educational Foundation of New Orleans has been made to Tulane University of Louisiana School of Medicine for development and expansion of clinical facilities in its psychiatric program. The grant will be used to pay salaries of additional personnel necessary for the program development, including social service workers, a psychiatrist and psychologist. Dr. Robert G. Heath, head of the newly created department of psychiatry and neurology, has estimated that facilities will permit treatment of approximately 300 underprivileged patients annually by the end of the third year of the program.

## MICHIGAN

**Charges Dismissed.**—Charges against Dr. Frederick W. Thomas, Detroit, were dismissed in the U. S. District Court *for the Eastern District of Michigan, Southern Division,* on June 6.

**Personal.**—Dr. Robert J. Buckman, Cincinnati, has been appointed medical consultant to the sales and promotion division of Parke, Davis & Company, Detroit. A graduate of the University of Louisville School of Medicine, 1930, Dr. Buckman spent 10 years in general practice in his home state of Kentucky and in Tennessee and 9 years in medical work in the pharmaceutic industry.

## MINNESOTA

**Personal.**—Dr. Benjamin W. Mandelstam, Gloversville, N. Y., on September 1 will become administrator of the new Mount Sinai Hospital in Minneapolis, which is to open next summer. He has been associated with Jewish Hospital of Brooklyn and Boston's Beth Israel Hospital and is presently executive director of the Nathan Littauer Hospital in Gloversville, N. Y.

**Postgraduate Medical Activities.**—During the last school year the activities of the department of postgraduate medical education at the University of Minnesota, Minneapolis, have returned to the prewar level, Dr. George N. Aagaard, director of the department, announced July 19 in his annual report. A total of 4,163 persons were enrolled in twenty-six continuation courses for physicians and twenty-five for nonphysician workers in medical fields. Special courses and new programs were mentioned in the report.

**Rural County Health Department.**—The Hennepin County Board of Commissioners on June 28 voted to establish a full time rural county health department. It will be under the control of a five man commission, composed of one doctor of medicine, one dentist and three laymen. A 1 mill levy on county residents will finance the community activity. The budget will provide for a full time health officer, and it is hoped that funds will be available for a public health engineer, a sanitarian and a health educator. Others will be employed as needed and to the extent that funds will permit.

## MISSISSIPPI

**Award Rural Medical Scholarships.**—Thirteen Mississippians were conditionally approved for state medical education loans by the State Medical Education Board at its meeting on July 30. The total number of students receiving state medical education loans, including those now in internship and those who have entered practice, is 202, representing seventy counties and one hundred and fifteen towns of the state. Seven of these students will be enrolled this fall at the University of Mississippi School of Medicine at Oxford, 3 at Tulane University, New Orleans; 1 at Emory University, Atlanta, Ga.; 1 at Columbia University, N. Y., and 1 at Harvard University, Boston.

## NEW YORK

**Early Care for Mental Illness.**—A pilot study in the promotion of psychiatric treatment as part of general hospital service will begin shortly at Roosevelt Hospital, New York, and Ellis Hospital, Schenectady, in cooperation with the State Department of Mental Hygiene. The experiments to be conducted will be directed toward the eventual decrease in the population of state mental hospitals.

**New York Post Graduate Lecture.**—The Cayuga County Medical Society will hear Dr. Joseph D. Godfrey, Buffalo, speak on "Treatment of Low Back Pain" September 15 at the Springside Inn, Auburn. The lecture has been arranged by the Medical Society of the State of New York in cooperation with the New York State Department of Health.

**Cancer Teaching Day.**—A cancer teaching day will be held September 14 beginning at 2 p.m. at the Homer Folks Tuberculosis Hospital, Oneonta, under the auspices of the New York Department of Health. The afternoon speakers will be Drs. Adrian A. Ehler, Albany; William H. Wehr, Buffalo, and Forrest O. Young, Rochester. At the evening meeting beginning at 7:30 Drs. Albert F. R. Andresen, Brooklyn, and Arthur J. Wallingford, Albany, will speak.

### New York City

**Open Russell Memorial.**—The James I. Russell Memorial Building of Roosevelt Hospital was opened June 29. The building is equipped to give medical treatment to 46 patients at one time and has an estimated capacity of 10,000 patients a year. It was named for Dr. Russell, who was a surgeon at the hospital for forty years.

**Create Division of Poliomyelitis.**—The City of New York Department of Health, "as part of definite plans to strengthen (its) facilities for handling the problem of poliomyelitis," has expanded its activities in this field by creating a Division of Poliomyelitis in the Bureau of Preventable Diseases. All epidemiologic work of the department on poliomyelitis will be centralized in the newly created division. Dr. Morris Siegel, a member of the city department of health since 1935, will head the division. In addition, the department's technical advisory committee on poliomyelitis has been reactivated. Creation of the new division and reactivation of the poliomyelitis committee do not indicate that the situation is alarming, an official said. These steps were taken as part of the department's plans for handling the problem should this become a bad poliomyelitis year for the city.

**Directory of Tuberculosis Clinics.**—The 1949 Directory of Tuberculosis Clinics in Greater New York was recently released by the New York Tuberculosis and Health Association. According to Dr. Donald B. Armstrong, president of the association, this directory will be published as frequently as necessary as a phase of the association's campaign to check the rising tuberculosis incidence rate in the city. The directory is an accurate reference to the 41 public and private clinics throughout the five boroughs, with addresses, phone numbers and clinic hours, as well as maps showing the boundaries for each district. Also included are the 21 district health centers for all boroughs. The directory was compiled under the direction of Dr. Foster Murray, chairman of the Tuberculosis Committee of the New York Tuberculosis and Health Association, and Mr. Donald E. Porter, secretary of the association's Tuberculosis Committee.

## OHIO

**University Appointments.**—Western Reserve University School of Medicine, Cleveland, has announced the following new appointments to the staff: Dr. Stuart H. Walker, Cleveland, who last year was a U. S. Army division surgeon, has been appointed professor of military science and tactics and fellow in pediatrics. J. Oliver Lampen, Ph.D., assistant professor of biochemistry at Washington University, St. Louis, was named associate professor of microbiology. A new assistant professor of pathology will be Dr. Russell S. Fisher, who has been resident fellow in legal medicine at Harvard Medical School, Boston.

**State Association Awards First Scholarship.**—The Ohio State Medical Association has granted its first annual Rural Medical Scholarship to C. Craig Wright of Winterset. Under the terms of the scholarship Mr. Wright will receive $500 each year during the four years he is in medical school. He completed his premedical training at Ohio State University. The scholarships were established to encourage rural young men and women to take up the study of medicine with the hope that they will become country doctors. One scholarship will be awarded annually to a freshman medical student. At the end of the first four year period and during subsequent years, each of four students will be receiving the annual $500 award.

## PENNSYLVANIA

**State Anesthesiologists Meeting.**—The annual meeting of the Pennsylvania State Society of Anesthesiologists will be held at the William Penn Hotel in Pittsburgh September 29 to October 1. For further information write Dr. William D. Steward, Secretary-Treasurer, Pittsburgh Society of Anesthesiologists, 5703 Jackson Street, Pittsburgh 6.

**Heart Disease and Drivers' Licenses.**—The Medical Society of the State of Pennsylvania, at the request of the Governor's Highway Safety Advisory Committee, has appointed a committee to study the problem of heart disease in automobile drivers. The committee will ascertain whether from the point of view of the medical practitioner it is possible and desirable to set up standards to protect the operator who has heart trouble, as well as passengers, pedestrians and property. The Governor's Highway Safety Advisory Committee has reported that each week at least one Pennsylvania operator of a motor vehicle is involved in an accident as a result of a heart attack and that a number of such drivers have died at the wheel. The committee comprises Dr. Constantine P. Faller, Harrisburg, chairman, and Drs. William G. Leaman Jr., Philadelphia; William L. Mullins, Pittsburgh; Wilfred H. Winey, Johnstown, and Luther I. Fisher, Bethlehem.

## UTAH

**Annual State Medical Meeting.**—The Utah State Medical Association will hold its annual meeting September 1-3 in the Union Building of the University of Utah in Salt Lake City. All physicians of the intermountain area are invited to attend. Guest speakers include:

Axel N. Arnesen, St. Louis, Treatment of Carcinoma of the Cervix Uteri.
Warren H. Cole, Chicago, Hyperthyroidism.
Irvin E. Hendryson, Denver, Early Diagnosis of Poliomyelitis.
Elmer Hess, Erie, Pa., Urologic Hints for the General Practitioner.
Elvin M. Jellenik, Sc.D., Fort Worth, Texas, Syndromes of Alcoholism.
Chester S. Keefer, Boston, New Antibiotic Drugs.
William P. Longmire Jr., Los Angeles, Total Gastrectomy.
K. Alvin Merendino, Seattle, Delay Factors in the Diagnosis of Carcinoma of the Esophagus.
Eric Oldberg, Chicago, Diagnosis and Treatment of Head Injuries.
Albert D. Ruedemann, Detroit, Acute Inflammatory Lesions Around the Eyes.
Shields Warren, Boston, Biologic Aspects of Atomic Energy.

The annual banquet will be held September 2.

## VIRGINIA

**Honor Dr. Coleman.**—Dr. Claude C. Coleman, professor of neurologic surgery at the Medical College of Virginia, Richmond, was honored at a scientific meeting commemorating the founding of the department of neurologic surgery at the college 30 years ago with Dr. Coleman as the department head. Technical papers were presented during the day, and at night about 70 persons attended a dinner at which Dr. Coleman was presented with a silver platter engraved with the names of his 15 hosts, who had trained under him.

## WISCONSIN

**University Appointment.**—Dr. Ray E. Green, Madison, has been appointed assistant professor of pharmacology at the University of Wisconsin Medical School, Madison. During the war he served at the Army chemical center in Maryland; on return to civilian life he was awarded a Rockerfeller fellowship as research assistant in pharmacology at the University of Wisconsin.

**Hospital Additions.**—Ground was broken for four new additions to State of Wisconsin General Hospital, Madison, early in July. When completed the additions will double the hospital bed capacity and provide more room for teaching needed to take care of the medical school's increased enrolment. Three new wings will be added to the present structure and a fourth unit, a one story lobby extension, will be used for offices and administration. One wing will be a cancer treatment unit; another will house psychiatric, neurosurgical and obstetric patients, and the third will centralize operative surgical facilities.

## GENERAL

**Board of Otolaryngology Examinations.**—The American Board of Otolaryngology will conduct the following examinations in 1950: January 8-11 in New Orleans at the Hotel St. Charles; May 17-20 in San Francisco at Hotel Mark Hopkins, and October 3-6 in Chicago at the Palmer House.

**Dr. Klotz to Receive Eli Lilly Award.**—The American Chemistry Society has given the $1,000 Eli Lilly and Company award in biological chemistry to Irving M. Klotz, Ph.D., associate professor of chemistry at Northwestern University, Chicago. He will receive the award September 19 at the national meeting of the society in Atlantic City. Dr. Klotz was cited for his services in several phases of protein chemistry.

**International Academy of Proctology.**—Officers elected at the first business meeting and scientific session of the International Academy of Proctology in Atlantic City June 10 are: Drs. Earl J. Halligan, president, Jersey City, N. J.; Caesar Portes, Chicago, president-elect; Alfred J. Cantor, Flushing, N. Y., secretary; William Lieberman, Brooklyn, N. Y., treasurer, and Earl J. Halligan, Jersey City, chairman of board of trustees (temporary). Membership is open to those specializing in proctology or allied fields. Information and application blanks may be obtained by writing to the academy, 43-55 Kissena Blvd., Flushing, N. Y.

**Congress on Pan American Medical Women.** — The second congress of the Pan American Medical Women's Alliance will be held in Los Angeles, November 1-6. Representatives are expected from all the Latin American republics as well as from the United States, Canada, Alaska and Hawaii. Members are invited to submit papers to the chairman, Dr. Alma Dea Morani, 3665 Midvale Avenue, Philadelphia 29, Pa., by September 1. The program committee is particularly interested in papers on the following subjects: modern use of antibiotics, virus diseases, rehabilitation programs, maternal and infant welfare, psychiatric problems, new drugs, cancer, and research for women doctors. The tentative program lists five scientific sessions.

**Inter-American Congress of Radiology.** — The Third Inter-American Congress of Radiology will take place in Santiago, Chile, at the Hotel Crillon November 11-17 under the patronage of the University of Chile. Papers delivered at the meeting will concern the radiologic exploration of the cardiovascular system with opaque material and diagnosis and simple radiologic explorations of the skull. Bilingual presentations of the proceedings of the meeting have been arranged. The registration fee of $20 should be sent to Dr. James T. Case, Regional Secretary for the United States, 55 East Washington Street, Chicago 2. The secretary will also provide full data on passports and other documents which congress members must carry with them.

**Passenger Safety Record for 1948.**—According to the National Safety Council, all major forms of transportation had a combined rate of 1.8 deaths per 100 million passenger-miles last year, the lowest in the 10 years that comparative records have been kept. Scheduled air transport planes showed the greatest improvement in 1948 as compared with 1947, although railroad passenger trains again had the lowest death rate. Scheduled air transport planes took 83 lives last year for a passenger-miles death rate of 1.3; the railroad passenger death total was 52 and the death rate 0.13. Buses had a rate of 0.18, although deaths totaled 120. Automobiles and taxis claimed the most passenger deaths with 15,200, but their mileage, 710 billion miles in 1948, brought the rate down to 2.1.

**Aero Medical Association Annual Meeting.**—The Aero Medical Association will hold its annual meeting August 29 to September 1 at the Hotel Statler, New York, under the presidency of Dr. Marion M. Kalez, Spokane, Wash. The program of the general meeting on Monday is as follows:

James H. Currens, Boston, Common Cardiac Conditions in the Young Male Adult.
Kinsey M. Simonton, Rochester, Minn., Observations of Hearing in Airline Pilots.
E. O. Errebo-Knudsen, Copenhagen, Denmark, Some Physiologic Reactions to the Passive Erect Posture.
Air Marshall Livingston, Preparation and Purpose of Parachute Medical Teams in the Royal Air Force.
John R. Poppen, Philadelphia, and R. R. Brown, Visual Problems in Designing Improved Indirect Lighting for Aircraft Cockpits.
Laurence E. Morehouse, Randolph Field, Texas, Electromyographic Study of Control Movements During Positive Radial Acceleration.

Section meetings will be held on the following days for the U. S. Air Forces, the Allied Specialties and the Civil Aeronautics Authority. Both scientific and commercial exhibits will be shown.

**Maxillofacial Surgeons' Meeting.**—The American Society of Maxillo-Facial Surgeons will hold its annual meeting in Montreal September 11-14 at the Royal Victoria Hospital and Montreal General Hospital. Included in the program are operative and dry clinics and lectures on carcinoma of the jaw, mouth and lip, repair of facial defects by bone grafts, treatment of defects of scalp and cranium, the child with cleft palate, sequelae of radiodermatitis, craniofacial injuries, management of fractures of the maxilla and associated bones, removal of salivary tumor from the mandible and its reconstruction, refrigerated bone grafts and pathologic conditions of the temporomandibular joint. Speakers will be Drs. John MacKay, Simeon J. Martin, John W. Gerrie, Frederick M. Woolhouse, Georges A. Cloutier, Hamilton A. Baxter, William U. Cone, John A. Drummond, William Douglas and Arthur R. Elvidge and Theo Waugh, all of Montreal; Drs. Carl S. Waldron, Samuel G. Balkin, Minneapolis; Fulton Risdon, Toronto; Carroll W. Stuart and Casper M. Epsteen, Chicago; John B. Erich, Rochester, Minn.; William Shearer, Omaha; John Kemper and Reed O. Dingman, Ann Arbor, Mich.; Robert L. Harding, Harrisburg, Pa.; V. H. Kazanjian, Boston, and Clifford Kiehn, Cleveland.

**Manual of Exchange Publications.**—UNESCO proposes to publish later in the year a Manual on the International Exchange of Publications. It is intended to publish as an annex to this manual a classified list of institutions, including libraries, universities, scientific institutions and learned societies throughout the world which are willing to exchange either their own publications or other publications which they have regularly at their disposal. UNESCO has been able to obtain a considerable amount of information concerning the availability of exchange material but feels that the information is still incomplete. All institutions which have so far not sent to UNESCO details of their exchange material are therefore urged immediately to communicate the following information to the UNESCO Clearing House for Publications, 19 Avenue Kleber, Paris 16ᵉ: (*a*) name and full address of institution and (*b*) exact titles of publications offered. (In the case of duplicates offered for exchange purposes, actual lists of duplicates are not required but only a statement that lists of duplicates are available. Institutions possessing a catalog of their own publications available for exchange are asked only to send a copy of the catalog or to give a full bibliographic description of the catalog.) Institutions which wish to exchange their publications only under certain conditions are asked to state these conditions. Only information which reaches UNESCO before October 1 can be used in the manual.

**Prevalence of Poliomyelitis.**—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service:

| | Week Ended | | | Jan. 1 to | | Total * | |
|---|---|---|---|---|---|---|---|
| *Division and State* | Aug. 6, 1949 | Aug. 7, 1948 | Median Expec. | Aug. 6, 1949 | Aug. 7, 1948 | March 19-Aug. 6, 1949 | March 20-Aug. 7, 1948 |
| New England States: | | | | | | | |
| Maine | 21 | 1 | 1 | 84 | 5 | 84 | 5 |
| New Hampshire | 9 | .. | 1 | 18 | 4 | 18 | 4 |
| Vermont | 7 | .. | 1 | 14 | 3 | 12 | 2 |
| Massachusetts | 82 | 10 | 14 | 215 | 26 | 215 | 23 |
| Rhode Island | 7 | .. | .. | 14 | .. | 14 | .. |
| Connecticut | 32 | 12 | 9 | 81 | 30 | 78 | 29 |
| Middle Atlantic States: | | | | | | | |
| New York | 390 | 65 | 65 | 862 | 255 | 842 | 219 |
| New Jersey | 81 | 32 | 16 | 214 | 135 | 178 | 128 |
| Pennsylvania | 29 | 29 | 29 | 94 | 118 | 84 | 107 |
| East North Central States: | | | | | | | |
| Ohio | 99 | 57 | 44 | 255 | 234 | 249 | 225 |
| Indiana | 96 | 23 | 11 | 370 | 105 | 360 | 95 |
| Illinois | 250 | 57 | 26 | 599 | 170 | 583 | 163 |
| Michigan | 147 | 28 | 28 | 479 | 85 | 452 | 79 |
| Wisconsin | 53 | 15 | 5 | 172 | 58 | 158 | 58 |
| West North Central States: | | | | | | | |
| Minnesota | 94 | 63 | 14 | 450 | 154 | 411 | 146 |
| Iowa | 84 | 34 | 5 | 292 | 198 | 279 | 185 |
| Missouri | 111 | 11 | 4 | 476 | 57 | 465 | 57 |
| North Dakota | 48 | 4 | 2 | 129 | 10 | 125 | 10 |
| South Dakota | 14 | 10 | .. | 100 | 46 | 78 | 46 |
| Nebraska | 31 | 29 | 7 | 128 | 151 | 115 | 146 |
| Kansas | 46 | 21 | 5 | 251 | 73 | 225 | 74 |
| South Atlantic St tes: | | | | | | | |
| Delaware | 3 | 16 | 2 | 14 | 66 | 12 | 65 |
| Maryland | 14 | 6 | 6 | 41 | 13 | 32 | 12 |
| District of Columbia | 4 | 10 | 3 | 17 | 24 | 16 | 24 |
| Virginia | 27 | 36 | 15 | 82 | 149 | 72 | 147 |
| West Virginia | 26 | 16 | 5 | 118 | 37 | 111 | 32 |
| North Carolina | 11 | 177† | 6 | 110 | 1,275† | 83 | 1,251† |
| South Carolina | 1 | 26 | 4 | 41 | 150 | 28 | 142 |
| Georgia | 14 | 18 | 7 | 81 | 95 | 73 | 94 |
| Florida | 8 | 16 | 7 | 99† | 132 | 78† | 115 |
| East South Central States: | | | | | | | |
| Kentucky | 35 | 20 | 3 | 185 | 75 | 177 | 72 |
| Tennessee | 36 | 31 | 10 | 205 | 109 | 199 | 102 |
| Alabama | 6 | 18 | 5 | 119 | 82 | 106 | 70 |
| Mississippi | 22 | 5 | 5 | 154 | 52 | 143 | 50 |
| West South Central States: | | | | | | | |
| Arkansas | 64 | 8 | 4 | 554 | 59 | 543 | 57 |
| Louisiana | 4 | 10 | 10 | 100 | 57 | 88 | 51 |
| Oklahoma | 75 | 23 | 14 | 596 | 142 | 589 | 136 |
| Texas | 121 | 81 | 38 | 1,324 | 1,041 | 1,233 | 1,020 |
| Mountain States: | | | | | | | |
| Montana | 5 | .. | .. | 16 | 22 | 15 | 12 |
| Idaho | 33 | 3 | 3 | 159 | 68 | 146 | 41 |
| Wyoming | 9 | 3 | .. | 25 | 30 | 25 | 30 |
| Colorado | 33 | 6 | 5 | 110 | 27 | 108 | 25 |
| New Mexico | 11 | 4 | 2 | 60 | 27 | 59 | 25 |
| Arizona | 6 | 2 | 2 | 44 | 30 | 33 | 29 |
| Utah | 8 | 4 | 2 | 68 | 24 | 52 | 21 |
| Nevada | 2 | 1 | .. | 10 | 2 | 10 | 1 |
| Pacific States: | | | | | | | |
| Washington | 24 | 15 | 12 | 143 | 81 | 98 | 63 |
| Oregon | 6 | 4 | 4 | 69 | 40 | 53 | 24 |
| California | 112 | 177 | 28 | 907 | 1,204 | 618 | 1,172 |
| Total | 2,451 | 1,237† | ... | 10,748† | 7,030† | 9,825† | 6,680† |
| Median, 1944-1948 | | | 932 | 3,992 | | 3,729 | |

* Last two columns show reported incidence since approximate average seasonal low: 20 weeks.

† Figures changed by corrected reports.

## CANADA

**Graduate Training in Ophthalmology.**—The University of Toronto Faculty of Medicine offers a three year postgraduate course in ophthalmology. The graduate instruction in ophthalmology in the teaching hospitals in Toronto has been coordinated under the direction of the university. The student spends the first year on a fellowship, the value of which is approximately $1,400, in one of the basic sciences of ophthalmology, and two years are spent on the intern service of one or more of the university teaching hospitals. Approximately four hours of didactic teaching are arranged for the students by members of the staff each week from October to May.

## LATIN AMERICA

**Congress on Phthisiology.**—The second Argentina Congress on Phthisiology will be held in Cordoba City in November. The official topics are (1) Technic and Results of BCG Vaccination; (2) Antibiotics in Treatment of Tuberculosis, and (3) Tuberculosis of Serous Membranes. Registration for the congress is through either of the offices of the secretaries of the Executive Committee: Santa Rosa 974, Cordoba, or Rio Bamba 476, Buenos Aires. The quota is 20 Argentine pesos ($4) for physicians and 100 Argentine pesos ($20) for representatives of private and official institutions and medical journals. The members who desire to present medical articles should notify the secretary of the Executive Committee one month before the congress, sending the title and conclusions of the article with the notification. Acceptance will be decided by the members of the board of directors of the congress. Reading time for each article is limited to 15 minutes.

## FOREIGN

**French Congress of Oto-Rhino-Laryngology.** — This congress will be held in the large amphitheater of the Faculty of Medicine of Paris October 17-21 under the chairmanship of Dr. André Bloch, Paris. Besides the scientific program, operations will be performed at the Hospital Services, conferences will be held and exhibits shown. For information address Dr. H. Flurin, Secretary-General à Cauterets (Hautes-Pyrénées), or Dr. H. Guillon, 6, Avenue Mac-Mahon, Paris.

**Professor Evans Retires.**—Prof. C. Lovatt Evans will retire from the chair of physiology, University College, London. Professor Evans first went to the University College in 1910 as Sharpey scholar in physiology under the late Prof. E. H. Starling. After Professor Starling's death Professor Evans completed "Starling's Principles of Physiology." During World War I Professor Evans served in the British army in connection with gas warfare and afterward joined the research staff at the National Institute for Medical Research, Hampstead, London, where he was associated with Sir Henry Dale. In 1922 he was appointed professor of physiology at St. Bartholomew's College and became Jodrell professor of physiology at University College, the position from which he is retiring.

# *Marriages*

Frederick Harrison Grabo, Schenectady, N. Y., to Miss Joan Catherine Coughlin of Pittsfield, Mass., June 18.

Rufus Solomon Gardner Jr., Hillsville, Va., to Miss Dorothy Ann Sutton of Newport News, June 21.

Wood S. Herren III, Birmingham, Ala., to Miss Ladye Ruth Holcomb of Nashville, Tenn., June 23.

Byron Jay Hoffman, Atlanta, to Miss Freda Gwendolyn Copeland of Brunswick, Ga., June 18.

Keith Woodham Gilmore to Miss Dorothy Louise Smith, both of Birmingham, Ala., June 17.

Elbert Neil Johnson Jr., Detroit, to Dr. Thelma Ruth Smith of Fort Mill, S. C., June 18.

Victor Allen Crumbaker, Billings, Mont., to Miss Lucille Jane Flaherty in Denver, June 14.

George R. Hamilton, Hartsburg, Ill., to Miss Ruby Lillian Owens of Highland, Ind., June 18.

Samuel Mickle Fox III Philadelphia, to Dr. Mary Alice Vann in Monroe, N. C., June 25.

Harry James Perlberg Jr., Baltimore, to Miss Toni Evelyn Aronsohn in New York, June 26.

Earl Kenneth Cantwell, Snyder, N. Y., to Miss Rita Roll of Buffalo, June 25.

# Deaths

**John Theron Wright** ⊕ Senior Surgeon, U. S. Public Health Service, Kensington, Md.; born in Reno, Nev., Feb. 14, 1912; McGill University Faculty of Medicine, Montreal, 1938; commissioned in the public health service in 1939 after interning at U. S. Marine hospitals in Norfolk, Va., and Galveston, Texas; formerly medical officer in charge at the Federal Reformatory in El Reno, Okla., and surgeon at the Federal Penitentiary at Leavenworth, Kansas; served on the Coast Guard cutter *Mojave* during World War II from July 1941 to May 1942; at one time assigned to U. S. Marine hospitals in Galveston, San Francisco and Kirkwood, Mo.; member of the American Public Health Association and the Washington section of the Society of Experimental Biology and Medicine; at the time of his death he was associated with the Microbiological Institute of the National Institutes of Health, Bethesda, Md., which he had joined in 1944 and where his work included studies in allergy, rabies virus, rabies vaccine and infectious hepatitis virus; died May 14, aged 37, of coronary occlusion.

**Walter Leon Angle** ⊕ East Stroudsburg, Pa.; Maryland Medical College, Baltimore, 1903; for many years school doctor; on the staff of the General Hospital of Monroe County; died June 10, aged 69, of coronary thrombosis.

**William Henry Beattie,** Utica, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1903; member of the American Academy of Ophthalmology and Otolaryngology; served on the staffs of the Masonic Soldiers and Sailors Memorial and St. Elizabeth hospitals; died April 19, aged 72, of cerebral thrombosis.

**Clarence Ward Bixler,** Longmont, Colo.; University of Colorado School of Medicine, Denver, 1907; member of the American Medical Association; died June 25, aged 70, of leukemia.

**Talma W. Buford,** Minter, Texas; Louisville (Ky.) Medical College, 1898; member of the American Medical Association; served as vice president of the Texas Association for Mental Hygiene; died in Paris June 2, aged 75, of cerebral hemorrhage.

**Court B. Chaffee,** Memphis, Tenn. (licensed in Tennessee in 1924); member of the American Medical Association; on the staff of St. Joseph's Hospital; died June 21, aged 63, of myocardial disease and cirrhosis of liver.

**Herbert Harvey Christensen** ⊕ Wausau, Wis.; Rush Medical College, Chicago, 1919; fellow of the American College of Surgeons; past president of the Marathon County Medical Society; served as secretary treasurer of the Ninth Councilor District Medical Society; on the staff of St. Mary's Hospital; for many years affiliated with Mount View Sanatorium; member of the American College of Chest Physicians and the American Trudeau Society; electrocuted June 20, aged 59, when his car hit a street light.

**Robert Miller Cooke,** Columbus, Ohio; Ohio Medical University, Columbus, 1907; died in the University Hospital April 25, aged 74.

**Percy Heilner Corson,** Plymouth Meeting, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1894; died June 27, aged 87, of acute cardiac failure due to chronic myocarditis.

**Charles Bartles Cortright,** Robles Del Rio, Calif.; Columbia University College of Physicians and Surgeons, New York, 1902; served on the staffs of Alta Bates and Herrick Memorial hospitals in Berkeley; died in Monterey, May 16, aged 71, of ruptured aortic aneurysm.

**Harry Gladstone Coulter,** New Wilmington, Pa., University of Pennsylvania School of Medicine, Philadelphia, 1919; served during World War I; died June 8, aged 60, of a heart attack following a fall.

**Jannes G. DeHond,** Milwaukee; Milwaukee Medical College, 1897; died May 18, aged 85, of heart disease.

**Frank Lowndes Dennis,** San Diego, Calif.; Southern Medical College, Atlanta, 1893; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; formerly practiced in Colorado Springs, Colo., where he was president of the El Paso County Medical Society and on the staffs of the Glockner-Penrose Hospital; served during World War I; died in the Mercy Hospital June 5, aged 77, of carcinoma of the liver.

**John Franklyn Detweiler,** Biloxi, Miss.; Long Island College Hospital, Brooklyn, 1886; Bellevue Hospital Medical College, New York, 1886; affiliated with the Biloxi Hospital; at one time president of the First National Bank of Wadsworth, Ohio; died June 7, aged 88, of coronary thrombosis.

**John Alexander Diamond,** Hammond, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1906; member of the American Medical Association; died in Fairview Hospital, Minneapolis, June 4, aged 75.

**Alexander Goldman** ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1906; an associate fellow of the American Medical Association; member of the Association for the Study of Internal Secretions; formerly a pharmacist; founder and first president of Bronx Hospital and active head of its medical board for many years; died June 15, aged 77.

**Mary Linnie Hazlett,** Portland, Ore. (licensed in Tennessee in 1914); died June 8, aged 63.

**Harvey Theodore Herold,** Kearny, N. J.; University and Bellevue Hospital Medical College, New York, 1918; fellow of the American College of Surgeons; member of the American Association of Industrial Physicians and Surgeons; served during World War I; formerly on the staffs of the Hospital of St. Barnabas and for Women and Children and Presbyterian and City hospitals in Newark and the East Orange (N. J.) General Hospital; medical director of the Western Electric Company; died June 24, aged 53.

**Thomas Clark Hinkle,** Onaga, Kansas; Kansas Medical College, Medical Department of Washburn College, Topeka, 1904; member of the American Medical Association; minister of the Congregational Church; died May 13, aged 72, of coronary thrombosis.

**Paul Difrancesca Hippolitus** ⊕ Bridgeport, Conn.; Yale University School of Medicine, New Haven, 1912; on the staff of the Park City Hospital; died June 10, aged 59, of carcinoma of the pancreas.

**Frank C. Huth** ⊕ Cambridge, Ohio; University of Louisville (Ky.) Medical Department, 1893; medical superintendent and owner of St. Francis Hospital, where he died June 20, aged 83.

**Cecil McKee Jack** ⊕ Decatur, Ill.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1902; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; for many years president of the board of the Macon County Tuberculosis Sanatorium; affiliated with the Decatur and Macon County Hospital; served with selective service boards during World Wars I and II; died June 28, aged 72.

**Agnes Martyn Johnston,** Brooklyn; Boston University School of Medicine, 1903; died June 4, aged 71.

**Victor Barcroft Kieffer** ⊕ St. Louis; Barnes Medical College, St. Louis, 1905; at one time on the faculty of his alma mater; chief surgeon for the Missouri-Kansas Texas Railway Employees Hospital Association; on the staffs of St. John's and Missouri Baptist hospitals; died June 23, aged 68, of carcinoma.

**Walter B. King,** Tampa, Fla.; University of Georgia Medical Department, Augusta, 1909; died recently, aged 73, of cerebral hemorrhage.

**George Edmund Knauf,** Sheyboygan, Wis.; Rush Medical College, Chicago, 1904; member of the American Medical Association; at one time county physician; affiliated with St. Nicholas and Sheboygan Memorial hospitals; died April 29, aged 66, of carcinoma of the throat.

**George Francis Knue,** Indianapolis; Indiana University School of Medicine, Indianapolis, 1909; died in St. Vincent's Hospital June 25, aged 64, of general arteriosclerosis.

**Herman Koenig,** Santa Monica, Calif.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; died June 22, aged 86, of heart disease.

**Joseph Thomas Kolbe,** Millville, N. J.; Georgetown University School of Medicine, Washington, D. C., 1935; certified by the National Board of Medical Examiners; member of the American Medical Association; served during World War II; died June 30, aged 37, of coronary thrombosis.

**Loren E. Lee,** Bonner Springs, Kansas; Kansas City Medical College, 1897; died in the Bethany Hospital, Kansas City, June 13, aged 75, of injuries received when the automobile in which he was driving was struck by a train.

**Jules Robert London** ⊕ Passaic, N. J.; University of Virginia Department of Medicine, Charlottesville, 1929; died in Seabright June 16, aged 45.

**William S. Loveland,** Joplin, Mo.; Curtis Physio-Medical Institute, Marion, Ind., 1893; member of the American Medical Association; on the staffs of St. John's Hospital and Freeman Hospital, where he died June 8, aged 81, of coronary thrombosis.

**William Linn McBride** ⊕ Corpus Christi, Texas; Rush Medical College, Chicago, 1901; specialist certified by the American Board of Dermatology and Syphilology; member of the American Dermatological Association, Inc.; formerly on the faculty of the University of Kansas School of Medicine in Kansas City, Mo.; served during World War I; died June 1, aged 73, of heart disease.

**Albert Anthony McCauley,** Boston; Harvard Medical School, Boston, 1897; for many years school physician in the Brighton district; served during World War I; died June 13, aged 79, of arteriosclerosis.

**Wylie Ernest McCleese,** Olive Hill, Ky.; University of Louisville School of Medicine, 1932; member of the American Medical Association; died June 16, aged 46.

**Francis Joseph McCormick** ⊕ Ithaca, N. Y.; Cornell University Medical College, New York, 1910; fellow of the American College of Surgeons; died in the Tompkins County Memorial Hospital June 30, aged 61, of emphysema and pulmonary fibrosis.

**John Robert McKenzie** ⊕ Watertown, Mass.; Harvard Medical School, Boston, 1894; for years a member of U. S. Pension Examiners; died in Baker Memorial of the Massachusetts General Hospital, Boston, recently, aged 81, of gastric ulcer with perforation and peritonitis, coronary arteriosclerotic heart disease and generalized arteriosclerosis.

**Joseph Johnston Macgowan,** Ashland, Miss.; Memphis (Tenn.) Hospital Medical College, 1890; member of the American Medical Association; died June 5, aged 80, of heart disease.

**Leonard E. Markin,** Glencoe, Ill.; Loyola University School of Medicine, Chicago, 1922; member of the American Medical Association; served during World War II; died in Wesley Memorial Hospital, Chicago, June 26, aged 51, of acute coronary occlusion.

**Earl Hugh Mayne** ⊕ Brooklyn; Bellevue Hospital Medical College, New York, 1893; fellow of the American College of Surgeons; an Associate Fellow of the American Medical Association; served as president of the Bay Ridge Medical Society; affiliated with Bay Ridge Hospital; died in Broadview General Hospital, Newport, Vt., June 9, aged 82, of coronary thrombosis.

**Charles Messick,** Topeka, Kan.; Kentucky School of Medicine, Louisville, 1888; died May 28, aged 83.

**Herbert Smith Miner,** Marshalltown, Iowa; Chicago Homeopathic Medical College, 1888; died in St. Thomas Mercy Hospital June 22, aged 91.

**Ignatius Joseph Murphy** ⊕ Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; member of the Radiological Society of North America; affiliated with Fairview Hospital in Minneapolis and St. John's Hospital in St. Paul; died in White Bear Lake, Minn., June 2, aged 65, of coronary thrombosis.

**James William O'Neil** ⊕ Springfield, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1911; formerly on the staff of Wesson Memorial Hospital, where he died May 22, aged 66.

**Eugene Orr** ⊕ Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1911; assistant professor of clinical otolaryngology at his alma mater; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; past president of the Nashville and Davidson County Academy of Ophthalmology and Otolaryngology; served during World War I; died May 18, aged 60, of chronic lymphatic leukemia.

**Ira Albert Pace,** Guide Rock, Neb.; University of Vermont College of Medicine, Burlington, 1891; past president of the Webster County Medical Society; served as a member of the school and library boards; president of the Guide Rock State Bank; died April 25, aged 80, of cerebral hemorrhage.

**Ernest Frederick Sappington** ⊕ Washington, D. C.; Hahnemann Medical College and Hospital of Philadelphia, 1905; died June 29, aged 68, of myocardial infarction and coronary thrombosis.

**Harold Charles Scheier,** New York; New York University College of Medicine, 1945; certified by the National Board of Medical Examiners; served during World War II; died June 29, aged 27.

**Otto Frederick Schussler,** Minneapolis; Minneapolis College of Physicians and Surgeons, 1905; member of the American Medical Association; died April 19, aged 75, of coronary disease and hypertension.

**Maximilian Jean Seidner** ⊕ Ogden, Utah; Chicago College of Medicine and Surgery, 1917; fellow of the American College of Surgeons and the International College of Surgeons; member of the American Trudeau Society; served during World War II; on the staff of the Thomas D. Dee Memorial Hospital; died in Worrall Hospital, Rochester, Minn., June 15, aged 55, of myocardial infarction and acute coronary occlusion.

**Alfred William Snedeker,** Staten Island, N. Y.; Cornell University Medical College, New York, 1924; member of the American Medical Association and the American Psychiatric Association; specialist certified by the American Board of Psychiatry and Neurology; superintendent of Richmond State Hospital, Richmond, Ind.; during World War II chief of the outpatient section of the neuropsychiatric division of Veterans Administration; died June 27, aged 51, of coronary occlusion.

**William David Stancil Jr.,** San Francisco; University of Colorado School of Medicine, Denver, 1944; member of the American Medical Association and the American Psychiatric Association; instructor in psychiatry at the Langley Porter Clinic, University of California Medical School; died in Palo Alto June 3, aged 29, of pneumonia.

**Milton J. Stern** ⊕ Lexington, Ky.; University and Bellevue Hospital Medical College, New York, 1911; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during World War I; affiliated with St. Joseph and Good Samaritan hospitals; consultant in ophthalmology for the U. S. Public Health Service Hospital; died June 12, aged 59.

**Samuel Tietze,** Hartford, Conn.; Cornell University Medical College, New York, 1906; served during World War I; affiliated with Mount Sinai Hospital; died June 9, aged 65, of heart disease.

**Marshall Coleman Twitchell,** Burlington, Vt.; University of Vermont College of Medicine, Burlington, 1893; member of the American Medical Association; fellow of the American College of Surgeons; formerly on the faculty of his alma mater; on the staff of the Mary Fletcher Hospital, where he died June 15, aged 78, of heart disease.

**Irl Lloyd Waterman** ⊕ Amery, Wis.; University of Wisconsin Medical School, Madison, 1933; died at Nipigon, Ontario, Canada, June 4, aged 46, of coronary thrombosis.

**Ernest Augustus White** ⊕ Columbia Falls, Me.; Jefferson Medical College of Philadelphia, 1891; formerly on the board of examining surgeons for the bureau of pensions at Machias; at various times health officer of Columbia Falls and Addison; died suddenly, April 30, aged 82, of coronary occlusion.

**Jasper Newton White,** Texarkana, Texas; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1893; member of the American Medical Association; past president and secretary of the Bowie County Medical Society; formerly member of the State Eclectic Medical Examining Board; served the Michael Meagher Hospital, Texarkana, Ark., in various capacities; died in St. Michael's Hospital, Texarkana, Ark., May 17, aged 83, of acute myocardial failure.

**Joseph Meade White** ⊕ Major, U. S. Army, retired, Poolesville, Md.; College of Physicians and Surgeons, Baltimore, 1897; veteran of the Spanish-American War and World War I; entered the medical corps of the U. S. Army in 1920; retired Sept. 30, 1935 for disability in line of duty; died May 12, aged 77, of coronary thrombosis.

**Ellis Warner Willhelmy,** Kansas City, Mo.; University of Kansas School of Medicine, Kansas City, 1923; assistant professor of medicine at his alma mater; fellow of the American College of Physicians; past president of the Kansas City Academy of Medicine; served during World Wars I and II; on the staffs of St. Mary's Hospital and St. Luke's Hospital, where he died May 5, aged 50, of carcinoma of the pancreas.

**Cunningham Wilson,** Birmingham, Ala.; University of Pennsylvania Department of Medicine, Philadelphia, 1884; member of the American Medical Association; fellow of the American College of Surgeons; served on the county board of education; for many years chief of staff of St. Vincent's Hospital; died June 15, aged 89.

**George Emanuel Winter,** New York; Long Island College Hospital, Brooklyn, 1911; died in Yonkers June 7, aged 64, of pulmonary tuberculosis.

**John Baker Younger,** Leesville, La.; University of Tennessee College of Medicine, Memphis, 1927; member of the American Medical Association; died May 31, aged 49.

# Foreign Letters

## LONDON

*(From Our Regular Correspondent)*

Aug. 3, 1949.

### Nationalized Medicine

It is difficult to define the state that exists at the moment between the doctors and the Minister of Health. It is not open warfare, but certainly it is not peace. With a large part of the profession the mood is one of smoldering discontent. The Minister passed his Amending Bill through the House of Commons by dint of the large majority of party supporters that he can always count on. The scope of the bill was confined to two matters, on both of which promises had been already made early in the dispute: the settlement of terms of partnerships arranged under the new act and an undertaking to the effect that, without further legislation, the present act could not be read to make the doctor a whole time paid servant of the state.

An important amendment from the opposition benches, allowing the prescriptions of private doctors to be dispensed at state expense, as are the prescriptions of doctors serving under the national health scheme, was defeated. Mr. Bevan has always opposed this principle; whether legally, under the clauses of the act, or not, may soon be settled by a test case in a court of law. This penalizing of the patients of doctors practicing outside the act, who, although they pay weekly for health services, do not get their medicines free as do the patients of National Health Service doctors, constitutes a sore point and may yet prove a big factor in the Minister's undoing. At the conclusion of the debate Mr. Bevan disclosed his fear that, if this privilege were recognized, the present 4 per cent of citizens who had not signed on lists of National Health Service doctors would probably increase and so sabotage the act.

In the Conservative Party's statement of policy, just issued, this question of parity of both types of patients is made a plank in the party's platform. The reference to Tory policy in respect of the health scheme is significant. It runs as follows:

"The nation has been warned by the Socialist Chancellor of the Exchequer that unless there is economy in the use of the Health Services some special charge or tax may have to be imposed. Conservatives share this anxiety about the maladministration and lack of foresight displayed by the Minister of Health and any Government may find itself forced to establish priorities based on need and urgency. We shall, therefore, see that the large sums of money spent on these Services yield their full value.

"The Health Services depend in the end upon the efficiency and goodwill of the family doctor. A Conservative Government would strengthen his position by restoring his freedom to practice anywhere and by offering a weighted capitation fee would give further security to doctors, particularly those in rural areas, with small lists. We shall allow an appeal against dismissal to go to the High Court instead of to the Minister.

"The scheme is intended to be comprehensive and any part of it should be available to any member of the public. We shall, therefore, allow private patients to obtain free of charge drugs prescribed by their doctor on a parity with people in the State scheme.

"By lack of forethought and bad administration the scheme has seriously damaged the valuable School Dental Service. Conservatives will restore the priority in staff and treatment for this service, and see that the needs of school-children, infants and expectant mothers are met first and fully.

"Much needs to be done to ensure that the hospital service is fully equipped and extended to meet all needs but this is more than can be accomplished in the lifetime of one Parliament at a time of great economic difficulty. There must, therefore be priorities. A Conservative Government will give first place to the re-opening of beds and the improvement of conditions for the nursing staff.

"As a result of the new legislation there is now no statutory duty on hospitals to admit the acutely sick. A Conservative Government will place on all hospitals within the Health Scheme a statutory duty to admit such patients, subject to proper safeguards.

"There are some hospitals associated with religious bodies and other voluntary organizations who wish to stay out of the scheme in order to preserve their special associations. A Conservative Government would be prepared to reconsider the cases of such hospitals as were not allowed to remain independent. But in general the former voluntary hospitals would be retained in the Scheme."

The position of the dentists under the new Service remains anomalous, the cost of the service to the nation being fantastic by comparison with the health care in general. In the case of the opticians the waste is grotesque, or would be if it were not that the country is so near bankruptcy. The following is an extract from a letter by the matron of a nursing home: "I went to see an old lady who lives in the Drapers Almhouses at M———. At the age of 87 she has just had five new pairs of spectacles. They were pressed upon her by the optician. She has spectacles for indoors, outdoors, reading, a special pair for playing the piano, a pair of bifocals and is to have still another pair to wear if she gets headaches"—which might well happen as the result of an anxiety state.

## ITALY

*(From Our Regular Correspondent)*

FLORENCE, June 30, 1949.

### Incomplete Rotation of Proximal Colon

At the Tuscan-Umbrian Society of Surgery, Professor Ricci discussed the mesenterium commune with incomplete rotation of the proximal colon. Nine patients were operated on at St. John's Hospital (Ospedale di S. Giovanni di Dio) in Florence. The first case was described by Professor Cavina, director and surgeon of the hospital in 1928; the other patients were observed among 9,362 laparotomies carried out in the last twenty years.

Professor Ricci stated that this condition should not be considered a disease entity, but that it may cause functional gastroduodenal disturbances (of pseudoulcerous type) or intestinal disturbances (constipation, tenderness about the right iliac fossa). Occasionally it may be associated with organic lesions (gastroduodenal ulcers, appendicitis). In other instances, as in 4 of the patients observed by the speaker, the abnormality contributed to occlusive phenomena, particularly volvulus of the cecum.

Professor Ricci expressed the belief that appendectomy in some instances may not have been indicated as only the anomaly of the intestine may have been responsible for the disturbance. This may be true also in other situations.

Professor Ricci advised a complete roentgenologic examination of the digestive tract prior to any abdominal intervention whenever possible to enable one to gain knowledge of the exact topography of the viscera.

According to the speaker the number of instances of such anomalies in world medical writings was about 200 at the end of 1947.

# Correspondence

## PRURITUS ANI ET VULVAE DUE TO ALLERGY

*To the Editor:*—Skin testing with regard to contactant injury pertinent to pruritus ani et vulvae has received the condemnation of Dr. H. Hailey (Hailey, H.: Pruritus Ani et Vulvae, J. A. M. A. **139:** 837 [March 26] 1949) and the approbation of Dr. A. H. Rowe (Pruritus Ani et Vulvae Due to Allergy, correspondence, J. A. M. A. **140:** 644 [June 18] 1949). When contactant irritation is suspected, as it is in most cases of pruritus ani et vulvae, the effort of the practitioner (in contradistinction, perhaps, to the medical scientist) is to keep possibly irritant substances off the affected regions and to obtain the cure not by doing something to the patient but by inducing the patient not to do something harmful to himself. Soap, toilet articles and medicines are the common causes of contact dermatitis of the anogenital region. Rather than doing skin tests with them, the evidently simple thing to do is to dispense with all of them. Water can be trusted as noninjurious, to be allowed both for cleansing and for applications (cold) to allay itching. Petrolatum can be trusted as almost always noninjurious, to be allowed for its soothing and protective effects. The patient and the practitioner (in contradistinction, again, to the medical scientist) do not care which of the things that did touch the skin irritated it; skin tests are in such instances a waste of time, money and effort. Admitting the usefulness of patch tests in some circumstances and in the pursuit of science, I (Sutton, R. L., Jr.: Contact Dermatitis: Simplification of Therapy and of the Search for Causes, *J. Missouri State M. A.* **44:** 481-484 [July] 1947; Contact Dermatitis: Practical Management and Identification of Cause Without Patch Testing, *Arch. Dermat. & Syph.* **59:** 36-44 [Jan.] 1949; Handbook of Diseases of the Skin, St. Louis, The C. V. Mosby Company, 1949, p. 91) have tried in several essays to convey the facts of their relative inutility and the past, or passing, overestimation of their significance.

Richard L. Sutton Jr., M.D., Kansas City, Mo.

## TWINS WITH PEPTIC ULCERS

*To the Editor:*—The study of twins is of great value in providing information concerning the respective importance of hereditary predisposition and environmental influences in disease in man. The results of the use of this method have shown a hereditary predisposition to tuberculosis, diabetes and tumor formation and a high, medium or low intelligence quotient.

There is some a priori evidence showing a hereditary predisposition for peptic ulcer. Only 6 cases of the occurrence of peptic ulcer in the one or both of monozygous or dizygous twins have been reported in the readily accessible literature. Since twins are born in 1 of 86 births and identical twins in 1 of 344 births and the general incidence of ulcer is 5 to 10 per cent, there should be plenty of material available.

I should like to ask physicians to cooperate in assembling such material by sending me reports of cases in which one or both twins have peptic ulcer, together with the following data: (1) the site of the ulcer, (2) the age of onset of ulcer, (3) the type of twins (monovular or diovular), (4) the sex of the twins, (5) the date of birth of the twins, and (6) the number and age of the brothers and sisters and the absence or presence of ulcer in each.

A. C. Ivy, M.D.
1853 West Polk Street, Chicago 12.

## INCIDENCE OF UNDULANT FEVER

*To the Editor:*—In a letter to the Editor in The Journal, May. 28, 1949, Dr. Frederick Stenn reported the incidence of undulant fever among 100 patients observed in private practice from the stockyards district of Chicago. He observed only 1 person with a positive reaction to an agglutination test and 1 patient with a history of brucellosis.

The agglutination test cannot be relied on as the only means for the detection of brucellosis. Several reports have been published indicating the decided variation in the results of the test obtained in different laboratories (Carpenter, C. M., and Boak, R. A.: The Significance of Brucella Abortus Agglutinins in Human Serum, *J. Immunol.* **17** [July] 1929. Eisele, C. W.; McCullough, N. B., and Beal, G. A.: Discrepancies in the Agglutination Test for Brucellosis as Performed with Various Antigens and as Reported from Different Laboratories, *J. Lab. & Clin. Med.* **32,** 7 [July] 1947).

The intradermal test is a far more dependable procedure for the detection of sensitivity to Brucella. A positive reaction to an intradermal test, however, does not differentiate immunity from active infection, but it is more specific than the result of an agglutination test. Therefore, the reaction to a skin test should be correlated with the results of the agglutination test. In addition, such information should be interpreted only in the light of the patient's illness after exclusion of other factors which might cause a similar syndrome.

Charles M. Carpenter, M.D., Los Angeles.

# Medical Motion Pictures

## FILM REVIEWS

**Endotracheal Anesthesia.** 16 mm., color, sound, 800 feet (1 reel), showing time twenty-five minutes. Prepared under the direction of Charles F. McCuskey, M.D. Produced in 1948-1949 by Billie Burke Productions, Hollywood. Procurable on loan from E. R. Squibb & Sons, 745 Fifth Avenue, New York 22.

Introductory and closing remarks are made by Dr. McCuskey, who stresses that atraumatic laryngoscopy and endotracheal anesthesia are accomplished only by experience and a thorough knowledge of the physiologic and anatomic principles involved. This film attempts only to present a few of the basic requirements for endotracheal anesthesia. The necessity for a deep plane of anesthesia before attempting laryngoscopy is stressed, and the role of various agents and methods in obtaining this plane is briefly discussed and demonstrated.

Specific apparatus for endotracheal intubation is presented, including laryngoscopes, endotracheal tubes and cuffs. A valuable part of this film is the demonstration on the sagittal cross section of a fresh cadaver of the introduction of an endotracheal catheter. The use of a laryngoscope for photography developed by Dr. Glenn Potter of Los Angeles makes an excellent addition to this production; this phase might well have been expanded to include more demonstrations under direct vision.

The advantages of the application of this method in various types of surgery are briefly demonstrated and discussed. The need for the judicious use of endotracheal intubation if intercostal paralysis occurs during the intravenous use of curare is stressed. A statement that paralysis of the intercostal muscles with curare may be necessary to accomplish a difficult ligation of a patent ductus arteriosus might be open to question. Also, the statement that thoracic surgery owes its advances to endotracheal anesthesia might be misleading unless further clarified, since numerous successful intrathoracic operations have been performed without this method. Success depends on one's keeping the lumen of the endotracheal catheter, or air passages, patent and providing sufficient oxygen under satisfactory intermittent pressures to maintain normal physiologic function of the heart and lungs and prevent hypoxia or fatal anoxia. Adequate blood replacement and oxygen therapy are important in advancing thoracic surgery.

Even though the aim of this film is to present only a few of the basic requirements for endotracheal anesthesia, valuable additions might have included discussion of the need for maintaining a patent lumen of the endotracheal tube by the use of catheter suction; view of the thoracic activity that must result when manual pressure is exerted on the breathing bag during resuscitation; demonstration of the protection of the teeth, and a brief presentation of the possible complications and the methods of their avoidance or management. Such brief additions would enhance the value of this outstanding teaching film.

The authors wisely conclude that endotracheal anesthesia is not an innocuous procedure, especially in the hands of the inexperienced, and elaborating on this briefly might prevent the occurrence of complications and disasters in the hands of the insufficiently informed. This film is recommended for showing to anesthesiologists, surgeons, residents, medical students and the general medical profession. The photography is excellent.

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# Council on Medical Education and Hospitals

## APPROVAL OF THE AMERICAN BOARD OF PROCTOLOGY

At a recent meeting, the Council on Medical Education and Hospitals, on the recommendation of the Advisory Board for Medical Specialties, voted to approve the American Board of Proctology. This board is the eighteenth examining board in the specialties to be approved by the Council. Until Dec. 31, 1954, the board will grant two types of certificates, one in anorectal surgery and one in colon surgery. After Jan. 1, 1955, the board will issue only one certificate, covering both anorectal and colon surgery. Prior to the establishment of the American Board of Proctology, certification in proctology was carried on by the American Board of Surgery acting in conjunction with the Central Certifying Committee in Proctology.

The first meeting of the new board at which candidates may present themselves for examination is being planned for November. Information concerning the examination may be obtained from the secretary-general. The president of the board is Dr. Curtice Rosser, Dallas, Texas, and the secretary-general, Dr. Louis A. Buie, 102-110 Second Avenue S.W., Rochester, Minn.

Donald G. Anderson, M.D., *Secretary*.

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# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various Centers. Sept. 12-14. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc. *Oral.* Denver, Oct. 16-20. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

American Board of Dermatology and Syphilology, Inc.: *Written.* Various Centers, Sept. 15. *Oral.* Cincinnati, Oct. 21-23. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Oct. 17. Asst. Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Part I.* Various Centers. Feb. 3. I [illegible] is Nov. 5. Sec., Dr. Paul Titus, 1015 H[illegible]

American Board of [illegible] ct. 15-19; Boston; April. Sec., Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II,* New York City, Feb. 9-10. Address: Sec.-Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: Chicago, Oct. 7-8. Final date for filing application is Sept. 1. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: *Oral.* Cleveland, Sept. 16-18; New York City, Oct. 21-23; Chicago, Dec. 9-11. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Preventive Medicine and Public Health: *Parts I and II.* New York, Oct. 22-24. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Proctology: November. Sec., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Psychiatry and Neurology, Inc. *Special Examination.* Chicago, Oct. 24-25. December, New York City. Final date for filing applications is Sept. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Cincinnati, Sept. 28-Oct. 2. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, October 26. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written.* December. *Oral and Clinical.* Chicago, Feb. 11-15. Final date for receipt of case histories is Sept. 1, 1949. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18.

### BOARDS OF MEDICAL EXAMINERS

Alaska: * Juneau, Sept. 6. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Arkansas: * *Examination.* Little Rock, Nov. 3-4. Sec., Dr. Joe Verser, Harrisburg. *Eclectic.* Little Rock, Nov. 3. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

District of Columbia: * *Examination.* Washington, Nov. 14-15. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Georgia: *Examination.* Atlanta, Oct. 11-12. *Reciprocity.* Atlanta, Oct. 13. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Illinois: Chicago, Oct. 4-6. Supt. of Registration, Mr. Fred W. Ruegg, Capitol Bldg., Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Sept. 5, Oct. 3, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Minnesota: * Oct. 18-19. Sec., Dr. Julian F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

Montana: Helena, Oct. 3-5. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, Sept. 8-9. Sec., Dr. J. S. Wheeler, 107 State House, Concord.

New Jersey: Oct. 18-21. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico: * Santa Fe, Oct. 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

New York: *Examination.* New York, Albany, Syracuse and Buffalo, Oct. 4-7. Sec., Dr. Jacob L. Lochner Jr., 23 S. Pearl St., Albany 7.

North Carolina: *Endorsement.* Asheville, Oct. 17. Sec., Dr. Ivan Proctor, 226 Hillsboro Street, Raleigh.

Ohio: *Examination.* Columbus, December. *Endorsement.* Oct. 2. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Puerto Rico: San Juan, Sept. 6-10. Sec., Dr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

Tennessee: *Examination.* Memphis, Sept. 28-29. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis 3.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Wisconsin: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

Wyoming: Cheyenne, Oct. 3. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: Juneau, Aug. 28. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, Sept. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Arkansas: *Examination.* Little Rock, Oct. 4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

Colorado: *Examination.* Denver, Sept. 14-15. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

District of Columbia: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 413C [illegible]

Florida: *E*[illegible] ec., Mr. M. W. Emmel, University of [illegible]

Michigan: [illegible] Arbor, Oct. 14-15. Sec., Miss Eloise Le[illegible] 15.

Minnesota: [illegible] 4-5. Sec., Dr. Raymond N. Bieter, 105 [illegible] nesota, Minneapolis.

Nebraska: [illegible] rector, Bureau of Examining Boards, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln 9.

Oregon: Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Wisconsin: Milwaukee, Sept. 24 and Dec 3. Sec., Prof. W. H. Barber, Ripon College, Ripon.

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American Heart Journal, St. Louis

**37**:321-480 (March) 1949

Unipolar Electrocardiographic Leads: Effects Produced by Eliminating Resistors Between Limb Electrodes and Central Terminal. J. M. Bryant, F. D. Johnston and F. N. Wilson.—p. 321.
*Neutralization of Anticoagulant Effects of Heparin with Protamine (Salmine). T. W. Parkin and W. F. Kvale.—p. 333.
Comparison of Precordial Electrocardiograms Obtained with CR, CL, CF and V Leads. M. Dolgin, S. Grau and L. N. Katz.—p. 343.
*Neosynephrine in Treatment of Paroxysmal Supraventricular Tachycardia. W. B. Youmans, M. J. Goodman and J. Gould.—p. 359.
VII. Correlation of Electrocardiographic and Pathologic Findings in Lateral Infarction. G. B. Myers, H. A. Klein and B. E. Stofer. —p. 374.
Effect of Potassium on Downward T Waves of Precordial Leads of Normal Children. E. Goldberger, M. J. Pokress and R. Stein. —p. 418.
Auricular Paroxysmal Tachycardia in Association with Myocardial Infarction. J. M. Askey.—p. 425.

**Neutralization of Anticoagulant Effects of Heparin.**—Parkin and Kvale found that 1.5 mg. of salmine sulfate neutralized 1 mg. of heparin in vitro. When salmine sulfate was administered in large doses to guinea pigs, rabbits and dogs, it was found to have toxic effects, but when small doses, such as 1.0 mg. per kilogram of body weight, were administered, toxic effects were not noted. Salmine neutralized the anticoagulant effect of intravenous injections of heparin into dogs. When heparin in Pitkin's menstruum was injected intramuscularly into dogs, the elevated coagulation time returned to normal temporarily after the intravenous injection of salmine. The authors also report studies of 10 persons who consented to undergo tests with salmine sulfate. They found that in human subjects the intravenous injection of 40 to 50 mg. of salmine sulfate neutralized promptly the anticoagulant effect of 50 mg. of heparin; when salmine sulfate was administered slowly in these doses it did not produce any reactions.

**Neosynephrine in Tachycardia.**—According to Youmans and associates, neosynephrine differs from epinephrine in that the molecule has a hydrogen atom instead of the hydroxyl group in the para position on the benzene ring. In spite of their similarity chemically, the cardiovascular effects of the two drugs are different. In a preliminary paper the authors had reported the efficacy of neosynephrine in reverting paroxysmal supraventricular tachycardia to normal rhythm. They now present data on the use of neosynephrine in the treatment of nineteen attacks of paroxysmal supraventricular tachycardia. The drug produced reversion to the normal rhythm in seventeen attacks in 7 patients. It failed in 2 cases in which the attacks developed after major surgical procedures. Neosynephrine restores the normal sinus rhythm within thirty-five to seventy seconds after rapid intravenous injection in most cases of paroxysmal supraventricular tachycardia. The reversion of the supraventricular tachycardia is attributable to reflex cardiac inhibition elicited by the rapid rise in pressure in the carotid sinuses and aortic arch. The rise in pressure occurs as a result of the vasoconstriction produced by neosynephrine. Presumably any vasoconstrictor compound which acts quickly and briefly, and which has little or no direct stimulating action on the cardiac conducting system, would revert paroxysmal supraventricular tachycardia. Neosynephrine reverted paroxysmal supraventricular tachycardia in most cases when the systolic pressure reached a level of 160 mm. of mercury or less. In occasional cases reversion was produced with neosynephrine nly when the systolic pressure was elevated to levels which might be considered too high for safety. In the typical case the rise in systolic blood pressure is proportional to the dose of neosynephrine, and the maximum dose to be used is determined by the maximum rise in pressure which is considered safe for the individual patient. The initial dose should not exceed 0.5 mg., and any subsequent dose is selected on the basis of the pressor response to the initial dose. Most attacks were reverted by 1.0 mg. or less. These studies suggest that intravenous injection of neosynephrine, or some other rapid-acting vasopressor substance, will prove to be the treatment of choice in selected cases of paroxysmal supraventricular tachycardia.

### American Journal of Clinical Pathology, Baltimore

**19**:201-300 (March) 1949

*Actinomycosis: Pathologic and Bacteriologic Study of Twenty-One Fatal Cases. L. A. Weed and A. H. Baggenstoss.—p. 201.
Simple Direct Method for Electron Microscopy of Peripheral Blood Cells. J. W. Rebuck.—p. 217.
*Value of Beryllium Determinations in Diagnosis of Berylliosis. F. R. Dutra, J. Cholak and D. M. Hubbard.—p. 229.
Needle Aspiration in Diagnosis of Lung Carcinoma: Report of Experience with Seventy-Five Aspirations. E. Y. Gledhill, J. B. Spriggs and C. H. Binford.—p. 235.

**Actinomycosis.**—Weed and Baggenstoss report pathologic and bacteriologic features of 35 cases in which diagnosis was actinomycosis at necropsy. The organism Actinomyces bovis could be demonstrated in histologic sections with reasonable certainty in only 21, with considerable doubt in 3 and not at all in 11. Two of the 11 cases had decidedly different gross and microscopic features, and the observations were suggestive of nocardiosis. Nocardia was isolated in pure culture from 1 of these. In at least 13 of the 21 cases showing A. bovis, it was possible to demonstrate microscopic evidence of mixed infection. The probable clinical significance of the organisms associated with A. bovis was reflected in the presence of renal involvement in 12 of 16 cases (pyelonephritis and abscess formation) and nonactinomycotic brain abscesses in 5 cases. Evidence from the study of fixed tissues indicated considerable variation in the detailed structure of colonies presumed to be A. bovis. The variations included presence or absence of clubs, apparent fusion of clubs, staining reaction of clubs by the Brown-Gram technic, number of filaments, length of filaments, some of them being very short and more closely resembling diphtheroids, and compactness of the colonies, some of which showed almost diffuse growth. The sections also showed considerable variations in the amount of fibrosis. The presence of sulfur granules and the microscopic pattern, usually considered characteristic of actinomycosis, may be produced by organisms other than A. bovis. In many cases culture procedures may be necessary to make the differentiation. Much of the confusion concerning the diagnosis and treatment of what has heretofore been called "actinomycosis" may be eradicated if thorough bacteriologic studies are made of each case and if one uses the terms "Nocardia" for the aerobic form of the organism and "nocardiosis" for the resulting disease process, while the term "actinomycosis" should be reserved for the condition associated with the anaerobic organisms designated by Bergey as A. bovis.

**Beryllium Determination, Diagnostic of Berylliosis.**—Dutra and co-workers analyzed twenty-four hour specimens of the urine of 27 persons, 8 with acute beryllium pneumonitis and 19 with chronic pulmonary berylliosis, 14 of them with occupational and 5 with nonoccupational disease. Beryllium was isolated from the urine of most of these persons. The excretion of beryllium in the urine of persons suffering with either acute or chronic berylliosis varies from day to day, so that a few normal analytic results cannot be accepted as excluding berylliosis. It is possible that some patients with berylliosis do not excrete detectable amounts of beryllium at any time. Beryllium has been isolated from the urine of persons working in beryllium plants who had no symptoms of berylliosis, while some of these persons have had acute pulmonary berylliosis previously. The presence of beryllium in the urine of patients who lived in the neighborhood of beryllium plants or had dusted the clothing of husbands working in beryllium plants aided in the diagnosis of their disease. With a single exception, appreciable quantities of beryllium were recovered from the lungs of 7 persons who died of acute pulmonary berylliosis and of

10 persons who died of chronic pulmonary berylliosis. Beryllium was recovered from other tissues of the body in some of these cases. The diagnosis of acute or chronic pulmonary berylliosis may, in some cases, be supported by analysis of urine and by tissue analyses for beryllium.

## American Journal of Diseases of Children, Chicago

**76:1-126 (July) 1948**

*Reticuloendothelial Granulomatosis: Report of 2 Cases of Hand-Schüller-Christian Disease. A. J. Blanchard and F. H. Boone.—p. 1.
Treatment of Anuria: Management of Patients with Intrarenal Lesions. E. L. Pratt.—p. 14.
*Treatment of Exophthalmic Goiter in Childhood: Report of Follow-up Study in 12 Cases. Anne Topper.—p. 26.
Perforated Adhesive Tape for Umbilical Hernias. R. Cohen.—p. 44.
Rheumatic Infection in Childhood: Fifteen to Twenty Year Follow-up: Caution Against Early Ambulant Therapy. Rachel Ash.—p. 46.
Graphic Portrayal of Infants' Growth with Consideration of Head Size. J. D. Boyd.—p. 53.
Treatment of Scarlet Fever: Comparison of Gamma Globulin with Other Therapeutic Agents in 1,667 Cases. J. F. Landon and S. J. Jackson. —p. 60.
Attempts to Adapt Prunus Virus I to Cotton Rats and Monkeys. J. A. Toomey, P. P. Pirone and W. S. Takacs.—p. 73.
Sigmoidoscopy in Diagnosis of Allergic Colitis. J. H. Lapin and W. W. Weissberg.—p. 78.
Beneficial Effect of Measles on Nephrosis: Report of 3 Cases. E. H. Meizlik and Anna-Mary Carpenter.—p. 83.

**Reticuloendothelial Granulomatosis.** — Blanchard and Boone report 2 cases of Hand-Schüller-Christian disease in a girl aged 6 months and in a boy aged 2½ years. The first infant showed dissemination of reticuloendothelial granulomas which, although presenting an occasional fatty droplet, failed to exhibit the characteristics of foam cells and cholesterol crystals. These so-called nonlipid granulomas were widely scattered, involving particularly the bone marrow, lymph nodes and spleen. The replacement of the blood-forming marrow tissue with the granulomas was responsible for the anemia, which was the most conspicuous clinical feature of the case. In the second case the most pronounced changes were present in the lungs, rib and skull. There were only minor infiltrations in the spleen, and the lymph nodes and the vertebral marrow were entirely free of them. The peculiar cutaneous infiltration is described in cases of so-called Letterer-Siwe disease. In the original biopsy specimen from the rib the histologic features were those of a nonlipid granuloma. At the autopsy several months later, sections from the same area showed extensive necrosis with acicular spaces, representing cholesterol crystals, and there was a massive infiltration of foam cells. A considerable quantity of hemosiderin pigment was also present, emphasizing the tendency for hemorrhages to occur in the lesions. The small miliary lesions in the spleen showed no tendency to hemorrhage. The features of these 2 cases of Hand-Schüller-Christian disease tend to support the hypothesis that the condition is a systemic reticuloendothelial granuloma of unknown origin. The presence of cholesterol in the lesions is a secondary occurrence, resulting from the ingestion of the lipid from the tissue fluids by the macrophages of the preformed granulomas. This theory is in accord with the well recognized fact that the value for serum cholesterol is normal in most cases. With the onset of necrosis in the lesion, this ingested cholesterol is liberated from the cells and is observed lying free in the lesions in crystalline form. From these sites it may be absorbed into the blood stream and give rise to transient hypercholesteremia.

**Toxic Diffuse Goiter.**—Topper reports 12 children, 5 boys and 7 girls between the ages of 3½ and 12 years with toxic diffuse goiter. The classic signs and symptoms of this disease, nervousness, tremor, tachycardia, exophthalmos and enlargement of the thyroid, were present in 11 of the patients. One patient did not show definite exophthalmos or tremor of the hands, but all the other symptoms mentioned were well pronounced. The basal metabolic rate was high in all patients, varying from + 24 per cent to + 52 per cent. Eight of these children were treated conservatively; 4 were subjected to thyroidectomy. These children had been observed for periods varying from three and one half years to twenty-five years. Of the 8 children treated medically, 1 died of an apparently unrelated condition ten years after the toxic diffuse goiter had been arrested. One child was lost track of after being well for three and one-half years. The other 6 were still under observation at the time of reporting. They were all well and leading normal lives. Of the 4 children treated surgically, 3 had occasional hypothyroidism, which responded readily to treatment. The fourth did not have any basal metabolism tests postoperatively. All 4 were well after a period of five to twelve years. One is tempted to speculate as to whether operation might have been avoided in these children. In childhood the thyroid is important for growth and development. During puberty there is a change in the endocrine activity, the gonads assuming greater importance and thyroid activity becoming more subdued. Any medical treatment that may cause even temporary remission of the symptoms of hyperthyroidism until puberty is established would be advantageous.

## American Journal of Hygiene, Baltimore

**49:127-246 (March) 1949**

Studies on Growth Requirements of Endamoeba Histolytica: IV. Further Observations on Cultivation of E. Histolytica and Other Intestinal Protozoa in Clear Medium Without Demonstrable Bacterial Multiplication. Some Modifications and Simplifications of Medium. J. G. Shaffer, F. W. Ryden and W. W. Frye.—p. 127.
Penetration of Dermatitis-Producing Schistosome Cercariae. L. Olivier. —p. 134.
Significance of Nose to Throat Carrier Ratios in Epidemiology of Hemolytic Streptococcal Infection. M. Hamburger Jr., H. M. Lemon and R. F. Platzer.—p. 140.
Comparative Study of Reactions Following Inoculation with Red Cell Elution and Sharples Centrifuged Influenza Vaccines. J. F. Sadusk Jr., P. C. Bassett and J. S. Meddaugh.—p. 148.
Observations on Effects of Various Sewage Treatment Processes upon Eggs of Taenia Saginata. W. L. Newton, H. J. Bennett and W. B. Figgat.—p. 166.
Poliomyelitis Virus of Low Virulence in Patients with Epidemic "Summer Grippe or Sore Throat." A. B. Sabin and A. J. Steigman. —p. 176.
Incidence of Poliomyelitis Virus in Cases of Mild Illness During Severe Urban Epidemic. G. C. Brown, J. D. Ainslie and T. Francis Jr.—p. 194.
Differentiation of Types of Poliomyelitis Viruses: I. Reinfection Experiments in Monkeys (Second Attacks). D. Bodian.—p. 200.
Id.: II. Reciprocal Vaccination—Immunity Experiments. Isabel M. Morgan.—p. 225.
Id.: III. Grouping of Fourteen Strains into Three Basic Immunological Types. D. Bodian, Isabel M. Morgan and H. A. Howe. —p. 234.

## American Journal of Surgery, New York

**77:271-408 (March) 1949**

Ectopic Pregnancy: I. With Special Reference to Abdominal Pregnancy. J. Jarcho.—p. 273.
Surgical Problems of Retained Intrathoracic Foreign Bodies. G. N. J. Sommer Jr. and C. S. McColloch.—p. 314.
Perforated Gastric and Duodenal Ulcers: Analysis of 200 Consecutive Cases. E. R. Shipley and J. H. Walker.—p. 329.
Brachial Plexus Anesthesia. J. F. Thurlow.—p. 338.
Construction and Care of Permanent Colostomy. L. Breidenbach and L. R. Slattery.—p. 344.
*Hidradenitis Suppurativa: Its Confusion with Pilonidal Disease and Anal Fistula. R. J. Jackman and H. B. McQuarrie.—p. 349.
Clinical Use of Oxycel in Minor Anorectal Surgery. G. W. Ault and E. P. Madigan.—p. 352.
Thyroid Surgery: Postoperative Problems and Complications. M. A. Howard.—p. 356.
Chronic Ulcerative Colitis and Associated Carcinoma. M. A. Hayes. —p. 363.
Mesenteric Cysts. R. L. Blackmun.—p. 371.

**Hidradenitis Suppurativa.** — According to Jackman and McQuarrie hidradenitis suppurativa is a chronic inflammatory disease of the skin and subcutaneous tissue affecting those areas in which the apocrine sweat glands are located, namely, the axillary, mammary, inguinal, genital and perianal regions. This condition is sometimes confused with pilonidal disease and anal fistula, and this may explain some of the so-called recurrent pilonidal cysts as well as recurrent anal fistulas. Although the perianal or the lower midsacrococcygeal region may be involved alone, there is usually also axillary adenitis either past or present. It may be necessary to ask the patient a direct question as to axillary involvement, since the process in that region may have been quiescent for years. The diagnosis of perianal manifestations of hidradenitis suppurativa is usually not difficult if the disease is thought of in case of what appears to be extensive anal fistula or pilonidal disease with many sinuses. An examination with the patient anesthetized may be necessary for a differential diagnosis between pilonidal cyst or anal fistula an hidradenitis suppurativa. Supporting the statement that hidradenitis suppurativa is much commoner than is generally appreciated is the fact that in an eight year period the condition w diagnosed at the Mayo Clinic in 388 patients. The axillas alone or in common with other sites were involved in 278 patients (alone in 187 cases), the mammary area alone or in combination with other sites in 32 patients, the groin in 92 and the perianal region in 125, or nearly one third of all patients. If conservative measures are ineffective, the involved perianal regions are excised en bloc. All sinuses and epithelial skin bridges should be explored and excised. Extensive denuded areas may require skin grafting.

## Archives of Dermatology and Syphilology, Chicago

**58:**357-454 (Oct.) 1948

Porphyric Bullous Dermatosis. I. Zeligman and M. Baum.—p. 357.
Eosinophilic Granuloma with Simultaneous Involvement of Skin and Bones. J. H. McCreary.—p. 372.
Cutaneous Diphtheria: Observations on Primary Pustular Lesion. E. W. Bixby Jr.—p. 381.
Transverse Net in Diagnosis of Onychomycosis. J. Alkiewicz.—p. 385.
Grenz Ray (Supersoft Roentgen Ray) Therapy of Cutaneous Diseases. S. L. Hanfling.—p. 390.
Recurrent Herpetiform Dermatitis Repens: Report of Case. M. Popper. —p. 398.
Allergic Contact Dermatitis Due to Rubber with Special Reference to Latex. F. A. Ellis and J. M. Seigel.—p. 405.
Genetics of Xanthoma Tuberosum Multiplex. M. T. Fliegelman, C. F. Wilkinson Jr. and E. A. Hand.—p. 409.
Eosinophilic Granuloma of Skin: Report of 3 Cases. W. F. Lever, C. G. Lane, J. G. Downing and A. S. Spangler.—p. 430.
Oral Iodine Therapy in Acne Vulgaris: Failure of Iodine, or Equivalent of Iodized Salt, to Produce Pustular Exacerbations. L. E. Gaul and G. B. Underwood.—p. 439.
Gumma of Lung: Report of Case. D. F. Bradley.—p. 444.
New Body Deodorant: Its Nonallergenic Properties and Usefulness. T. F. B. Darnell.—p. 451.

## Archives of Internal Medicine, Chicago

**82:**321-418 (Oct.) 1948

Peripheral Neuritis in Periarteritis Nodosa: Clinicopathologic Study. L. L. Lovshin and J. W. Kernohan.—p. 321.
Severe Hyperlipemia Associated with Nondiabetic Pregnancy: Report of Case. R. J. Rohn, C. Gandek and N. D. Bartley.—p. 339.
Primary Bronchogenic Carcinoma: Correlation of Recent Literature with 131 Proved Cases. J. J. O'Keefe.—p. 345.
*Liability of Addiction to 6-Dimethylamino-4-4-Diphenyl-3-Heptanone (Methadon, "Amidone" or "10820") in Man: Experimental Addiction to Methadon. H. Isbell, A. Wilker, Anna J. Eisenman and others.—p. 362.
Prognosis in Late Latent Syphilis. H. L. Blum and C. W. Barnett. —p. 393.
Lymphogranuloma Venereum in Patient with Mediastinal Lymphadenopathy and Pericarditis: Isolation of Virus from Supraclavicular Lymph Node. W. H. Sheldon, Margaret J. Wall, J. DeR. Slade and A. Heyman.—p. 410.

**Addiction to Methadone.**—Isbell and co-workers state that after the invasion of Germany an intelligence team which investigated the German pharmaceutic industry found that chemists had developed a potent synthetic analgesic drug, 6-dimethylamino-4-4-diphenyl-3-heptanone which bore the serial number 10820. Investigation of the pharmacology of the drug in the United States showed that many of its actions resembled those of morphine. The authors present the results of studies on the liability of addiction to methadone. Methadone relieved the symptoms of abstinence from morphine. Methadone prevented the appearance of signs of physical dependence when substituted for morphine at a level of 1 mg. of methadone for each 4 mg. of the stabilization dose of morphine. Once substitution was effected, the dose of methadone could be rapidly reduced without signs of abstinence. After withdrawal of methadone, which had been substituted for morphine, a definite abstinence syndrome appeared which was slower in onset and milder than the syndrome of abstinence from morphine. Fifteen former morphine addicts were given methadone to produce addiction for twenty-eight to one hundred and eighty-six days. The psychologic changes and the general behavior of the subjects resembled those seen during morphine addiction. No serious toxic effects were noted. Fasting blood sugar content and intravenous dextrose tolerance tended to be low during addiction. Inflammation, induration and hypesthesia developed in the skin over the injection sites. Electroencephalographic patterns were slowed. The sedative action appeared to be cumulative. Systolic blood pressure, respiratory rates and pulse rates were depressed throughout addiction. Tolerance to the following effects of the drug developed as addiction progressed: pain-threshold-elevating action, sedative action, effect on the electroencephalogram, miotic action, depression of caloric intake and probably circulatory and respiratory actions. After abrupt withdrawal of methadone, an abstinence syndrome ensued. The average intensity of symptoms of abstinence was mild. The syndrome of abstinence from methadone differed from the morphine abstinence syndrome in that few signs of autonomic dysfunction were observed, the onset of abstinence was slower, the intensity was milder and the course was prolonged. Electroencephalograms did not return to normal for two to five days after withdrawal. The following evidence for habituation to methadone was observed: euphoria after repeated small doses (or single large doses), behavioristic and psychologic changes resembling those in morphine addiction, requests for increases in dosage during addiction, requests for methadone following addiction and preference for methadone over all other drugs. The same precautions should be observed in prescribing methadone as are used in prescribing morphine.

## Archives of Pathology, Chicago

**47:**1-98 (Jan.) 1949

*Crystalline Ester Cholesterol and Atherosclerosis. T. Leary.—p. 1.
Multinucleated Epithelial Cells in Tubules of Human Kidney. J. W. Harman and J. M. Hogan Jr.—p. 29.
Quantitative Analysis of Growth of Epidermis. J. G. Hoffman.—p. 37.
Regional Pluricentric Hemolympholipoblastosis. C. G. Tedeschi.—p. 44.
Intussusception, Fecal Impaction and Volvulus Produced by Injection of Pilocarpine. C. M. Flory and Marjorie R. Allen.—p. 60.
Diabetes and Uremia Diagnosed at Autopsy by Testing Cerebrospinal Fluid and Urine. H. N. Naumann.—p. 70.
Mural Cells of Capillary Hemangiomas. E. J. Eichwald.—p. 78.
Asymptomatic Retention of Pancreatic Secretion. Maud L. Menten and W. C. Kinsey.—p. 90.

**Cholesterol and Atherosclerosis.**—According to Leary it is now generally accepted that crystalline ester cholesterol is constantly present in the active lesions of atherosclerosis. Illustrations of lesions of the aorta and of the coronary arteries of 5 men between the ages of 25 and 72 are presented. One of them died from obliterative pericarditis; 2 died of hypertensive heart disease and coronary sclerosis, while the remaining 2 were killed in accidents. This visual evidence, added to the data already published, indicates that atherosclerosis is a metabolic disease, that the relation of crystalline ester cholesterol to the lesions is as specific as is that of the tubercle bacillus in tuberculosis, that the focal character of the disease and the localization of its lesions are due to the crystalline esterification of excess cholesterol, in whatever form it is ingested, in the liver and the scavenger action of Kupffer's cells in removing that excess from liver cells, and that the excess cholesterol is transported into the circulation and deposited in the subendothelial layer of the arterial intima in regions where the cholesterophages can make contact with the arterial intima. In rabbits fed cholesterol the daily excess of cholesterol may lead to the production of massive acute lesions in which many layers of cholesterophages occur, with the cells enveloped in a delicate fibroblastic meshwork. These acute lesions are rare in man, but they were observed in 1 of the author's cases.

## Archives of Surgery, Chicago

**58:**129-242 (Feb.) 1949

Volvulus of Cecum: Review of 100 Cases in Literature and Report of 6 New Cases. J. L. Donhauser and S. Atwell.—p. 129.
Situs Inversus with Associated Abnormalities: Review of Literature and Report of 3 Cases. J. R. Johnson.—p. 149.
*Effect of Heparin and Penicillin on Experimentally Produced Thrombophlebitis. J. Rabinovitch and B. Pines.—p. 163.
*Factors Contributing to Low Mortality from Appendectomy for Acute Appendicitis: Ten Year Study. A. B. McGraw.—p. 171.
Unfavorable Reactions to Oxidized Cellulose (Oxycel) in Bed of Gallbladder: "Retained Oxycel Sponge Syndrome." E. S. Vanderhoff and K. A. Merendino.—p. 182.
Infections of Bones and Joints. P. Lewin.—p. 189.
Congenital Dislocation of Hip. A. B. Gill.—p. 236.

***Effect of Heparin and Penicillin on Thrombophlebitis.***—The study presented by Rabinovitch and Pines was undertaken with the view of determining whether heparin alone or in combination with penicillin could bring about the solution of a clot in the presence of experimentally produced acute thrombophlebitis. The described experiments produced evidence to show that heparin is not effective in preventing the formation or causing the solution of an intravascular clot in the presence of acute thrombophlebitis. The combined administration of heparin and penicillin will prevent or cause the disappearance of a clot in a large number of subjects with experimentally produced acute thrombophlebitis.

**Mortality Rate in Appendectomy.**—McGraw reviewed the records of his clinic for the ten year period 1938 to 1947, inclusive. During the period in question 1,411 patients underwent operation at Henry Ford Hospital, Detroit, for acute appendicitis. The over-all mortality rate for the entire series was 0.64 per cent (9 deaths). Among the 46 patients who had abscesses drained there were 2 deaths, a mortality rate of 4.4 per cent. Among all 1,365 patients who underwent appendectomy there were 7 deaths, a ten year mortality rate of 0.5 per cent. All of the 9 deaths occurred among the 824 patients operated on during the first five year period, whereas during the last five years the mortality rate was zero. On the basis of a careful analysis of their cases the authors conclude that in spite of the indisputable help provided by the sulfonamide and antibiotic drugs, the prime factors in the elimination of death in acute appendicitis are: (1) the alertness with which symptoms and signs of the disease are recognized, (2) the promptness with which the patient is brought to operation after diagnosis and (3) the consistent use of an operative technic which is sound in conception and safe in detail for the difficult as well as for the uncomplicated case.

## Blood, New York

### 4:201-300 (March) 1949

*Urethane (Ethyl Carbamate) Therapy in Multiple Myeloma. J. P. Loge and R. W. Rundles.—p. 201.
Response of Eosinophils in Guinea Pig to Sensitization, Anaphylaxis and Various Drugs. M. Samter.—p. 217.
Factor in Serum Which Accelerates Conversion of Prothrombin to Thrombin: I. Its Determination and Some Physiologic and Biochemical Properties. A. de Vries, B. Alexander and R. Goldstein. —p. 247.
"Refined" Liver Extract in Tropical Macrocytic Anemia. J. C. Patel and Y. M. Bhende.—p. 259.
Case of Cyclical Agranulocytosis with Marked Improvement Following Splenectomy. H. W. Fullerton and H. L. D. Duguid.—p. 269.
Chronic Neutropenia: Favorable Response Following Splenectomy. H. A. Weiss and W. T. Collins.—p. 278.
Leukemoid Reaction Due to Mixed Malaria Infection: Report of Case. J. A. Riley and G. M. Robins.—p. 283.

**Urethane in Multiple Myeloma.**—Loge and Rundles report 4 patients with multiple myeloma whom they treated with urethane for eight to ten weeks, with total doses of 120 to 290 Gm. The patients were observed over periods of seven to thirteen months. Striking benefit relating to all aspects of the disease was observed. Fever, skeletal pain and acute symptoms subsided after two to four weeks of therapy. In patients with severe anemia, immature granulocytes and nucleated red cells disappeared from the circulating blood and the blood values improved greatly over a period of several weeks. Abnormal plasma or "myeloma" cells decreased quantitatively in the bone marrow and underwent morphologic changes indicative of retarded or arrested growth. The serum protein abnormalities characteristic of multiple myeloma became less pronounced or disappeared, as did the albuminuria and Bence-Jones proteinuria. Serial roentgenograms of the skeleton showed no progression in the destructive lesions. There was little evidence of skeletal recalcification for four to six months after treatment. The long term results of urethane therapy in multiple myeloma, the liability to exacerbation, the effectiveness of subsequent courses of urethane therapy, the course of the associated renal disease and the extent of skeletal recalcification and repair are matters for further study.

## Connecticut State Medical Journal, Hartford

### 13:1-92 (Jan.) 1949

Socialistic Medicine in England—Personally Observed. R. E. S. Young. —p. 6.
Cerebral Palsy in Connecticut Today. R. V. Fuldner and L. Spekter. —p. 12.
Trauma from Noise in Industry. N. Canfield.—p. 21.
Case of Infantile Cortical Hyperostosis (Caffey-Smyth Syndrome). C. G. Thompson.—p. 28.
Carcinoma of Mid-Thoracic Esophagus. D. R. Morrison.—p. 30.
Intravenous Procaine in Management of Arthritis (Interim Report) D. J. Graubard and M. C. Peterson.—p. 33.
Heritage of Medicine in Peril. F. A. Harness.—p. 37.

## Delaware State Medical Journal, Wilmington

### 21:25-42 (Feb.) 1949

Use of Radioactive Isotopes in Clinical Medicine. J. Z. Bowers.—p. 25.
Current Poliomyelitis Research. H. E. Van Riper.—p. 29.
The Delaware Heart Association. E. R. Miller.—p. 37.

### 21:43-64 (March) 1949

Importance of Allergic Diseases in Medicine. F. W. Wittich.—p. 43.
Infectious Hepatitis. W. P. Havens Jr.—p. 50.
Some Limitations in Roentgen Diagnosis. R. Wigh.—p. 53.

## Endocrinology, Springfield, Ill.

### 44:211-292 (March) 1949

Study on Mechanism of Picrotoxin-Induced Ovulation in Rabbit. S. C. Kasdon.—p. 211.
Neural Factor in Mechanism by Which Estrogen Induces Release of Luteinizing Hormone in Rat. C. H. Sawyer, J. W. Everett and J. E. Markee.—p. 218.
Neurogenic Timing Factor in Control of Ovulatory Discharge of Luteinizing Hormone in Cyclic Rat. J. W. Everett, C. H. Sawyer and J. E. Markee.—p. 234.
Variables Affecting Assay of Testosterone Propionate Using Seminal Vesicle Response of Juvenile Castrated Male Rat. C. G. Wills, S. E. Rampton and L. I. Pugsley.—p. 251.
Administration of Adrenocorticotrophic Hormone to Normal Human Subjects: Effect of Leukocytes in Blood and on Circulating Antibody Levels. Philippa H. Herbert and Joan A. de Vries.—p. 259.
Adreno-Cortical Changes in Syrian Hamsters Following Gonadectomy. P. H. Keyes.—p. 274.
Quantitative Interference with Estrogen-Induced Tissue Growth by Folic Acid Antagonists. R. Hertz and W. W. Tullner.—p. 278.
Elevation of Plasma Riboflavin in Estrogen Treated Female Chicks. R. Hertz, F. G. Dhyse and W. W. Tullner.—p. 283.

## Geriatrics, Minneapolis

### 4:67-126 (March-April) 1949

Psychological Orientation in Geriatrics. E. B. Allen.—p. 67.
Endocrine Aspects of Gerontology. H. H. Turner.—p. 74.
Prostatic Diseases in Old Men. N. J. Heckel.—p. 79.
Quinidine in Geriatrics. S. A. Weisman.—p. 85.
*Carotid Sinus Syndrome. E. Evans.—p. 90.
Should Elderly Cancer Patients Be Told? R. Ginzberg.—p. 101.
Neurologic Disorders in Later Life. L. J. Pollock.—p. 108.

**Carotid Sinus Syndrome.**—Evans reviews the records of 10 patients with carotid sinus syndrome. All had spontaneous syncope as well as vertigo, lightheadedness or staggering. Similar attacks could be reproduced in each by carotid sinus pressure. All appeared to have some carotid sinus dilatation—the right more than the left. Eight showed some sclerosis of the sinus. Eight had other cardiovascular signs or symptoms, including bradycardia, paroxysmal tachycardia, bothersome ectopic ventricular contractions, arteriosclerosis, atherosclerosis, arteriolar sclerosis, essential hypertension, temporary spontaneous hemiplegia, angina pectoris, acute coronary insufficiency, myocardial infarction and right and left bundle branch block. Four had coronary heart disease. The blood cholesterol was elevated in all the 6 patients in whom it was checked. The carotid sinus syndrome is primarily a disease of men in the upper age brackets. Fatigue and emotional states are important in the vagal as well as the cerebral type and may account, at least in part, for spontaneous variations in carotid sinus sensitivity. Psychotherapy is an important part of management. It is probable that pathologic changes in the wall of the sinus itself play a part in the picture. Associated abnormalities, such as Ménière's disease and the cardiovascular syndrome may make the diagnosis appear more difficult or appear more serious. Quinidine may reduce the number of seizures when ectopic beats are bothersome. More than one type of carotid sinus syncope may not only coexist, but one form may predominate at one time and another at another time.

## Journal of Bacteriology, Baltimore

### 57:137-268 (Feb.) 1949. Partial Index

Fermentation of Glucose by Suspensions of Escherichia Coli. J. L. Stokes.—p. 147.
Diagnosis of Klebsiella Pneumoniae (Friedlander's Bacillus) from Gastrointestinal Tract of Normal Healthy Adults. H. E. Lind and Diana Allan.—p. 159.
Biological Characteristics of Streptomycin-Dependent Mycobacterium Ranae. D. Yegian and R. J. Vanderlinde.—p. 169.
Antibacterial Principle from Centaurea Maculosa. C. J. Cavallito and J. H. Bailey.—p. 207.
Factors Producing High Yeast Yields in Synthetic Media. B. H. Olson and M. J. Johnson.—p. 235.
Enhancement of Chemotherapeutic Action of Penicillin. Gladys L. Hobby, Tulita F. Lenert, Wilma Reed and Dorothy Rinne.—p. 247.
Nutrition of Phytopathogenic Bacteria. III. Gram-Positive Phytopathogenic Corynebacterium Species. M. P. Starr.—p. 253.

## Journal-Lancet, Minneapolis

### 69:33-72 (Feb.) 1949

Malignant Lesions of Anal Canal. W. C. Bernstein.—p. 33.
Wolff-Parkinson-White Syndrome: Report of 2 Cases. R. A. Jordan and R. I. Canuteson.—p. 38.
Medical Group Practice in the United States: V. Growth of Groups. M. S. Goldstein.—p. 42.
Bacteriologic Studies by New Methods of Major Epidemic of Poliomyelitis, 1947. E. C. Rosenow.—p. 47.
New Method of Maintaining Therapeutic Penicillin Blood Levels on Oral Administration. G. Cronheim and Mary E. Baird.—p. 56.
Clinical Evaluation of Glycerite of Hydrogen Peroxide in Vaginal and Cervical Infections: Preliminary Report. S. P. Norman and P. P. Norman.—p. 60.

### 69:73-118 (March) 1949

Surgical Treatment of Degenerative Disease of Hip Joint. G. A. Kernwein.—p. 74.
Study of Congenital Malformations. R. E. Lucy.—p. 80.
Practical Aspects of Allergy. E. L. Grinnell.—p. 82.
Treatment of Acute Cholecystitis. V. G. Borland and W. H. Johnston. —p. 87.
Methemoglobinemia: Report of 2 Cases and Clinical Review. L. B. Silverman.—p. 94.
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## Journal of Nutrition, Philadelphia

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Nine Essential Amino Acids in Pure Varieties of Wheat, Barley and Oats. L. W. McElroy, D. R. Clandinin, W. Lobay and S. I. Pethybridge.—p. 329.
Studies on Adequacy of Human Milk and Artificial Human Milk for the Rat. M. L. Scott and L. C. Norris.—p. 337.
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## Journal of Pediatrics, St. Louis

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*Streptomycin Therapy for Pertussis. Vida H. Gordon and P. J. Almaden.—p. 279.
Accidental Vaccinia: Report of 2 Cases in Infants, with Eczema Vaccinatum in 1 Case. R. W. Collett and R. L. J. Kennedy. —p. 284.
*Evaluation of Replacement Transfusion in Treatment of Hemolytic Disease of Newborn Infant. D. P. Arnold.—p. 293.
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Occurrence of Type Five Sulfadiazine-Resistant Hemolytic Streptococcus. T. L. Hartman, J. S. Hoes and W. Cary.—p. 331.
Etiology of Erythema Nodosum. R. L. Roddy.—p. 338.
Blood Sugar in Newborn Infants. Mildred A. Norval, R. L. J. Kennedy and J. Berkson.—p. 342.
Post-Traumatic Amnesic Confabulatory Syndrome in Child: Case Report and Discussion. E. Ascher.—p. 352.

**Streptomycin for Pertussis.**—Gordon and Almaden investigated the clinical effect of streptomycin against Hemophilus pertussis. It was the policy to admit to the isolation wards of the University Hospital at Little Rock, Ark., only cases of severe disease, usually with complications, or infants. Patients more than 8 months of age were admitted only if the disease was severe. Patients of the same type who had been admitted during the three years prior to the advent of streptomycin therapy were considered suitable for classification as control cases. The use of streptomycin in a dosage of 25 mg. per pound (50 mg. per kilogram) of body weight caused a definite and rapid improvement of 24 patients with severe pertussis. Comparison of the case fatality rate of the group of 28 controls and 27 treated patients revealed a statistically significant reduction in the treated group. The difference in the case fatality in the two groups is slightly more than three times the standard error. No significant improvement in the length of hospitalization was noted in the treated group as compared to the control group. The authors are of the opinion that streptomycin in conjunction with hyperimmune serum should be used on all critically ill hospitalized patients with whooping cough.

**Replacement Transfusion in Hemolytic Disease of the Newborn.**—Arnold treated icterus gravis for the past twenty years with multiple transfusions. Some of the infants were saved, but the infants with severe disease died. In 1942, when it became evident that the Rh factor was clinically important, the author started using Rh-negative blood and multiple transfusions. As the subtypes of Rh were determined and the Hr setup recognized he used homozygous Rh-positive blood in transfusing these rare Hr cases. With this regimen there was a definite improvement in results, but there was still much left to be desired. For the last two years he has been treating patients with severe hemolytic disease of the newborn by means of replacement transfusion. He used the umbilical vein method as described by Diamond the first twelve hours of life. When not using umbilical vein, he withdraws and replaces through the saphena magna vein. During 1948 the author has employed replacement transfusions in 16 patients and lost 3; the 3 losses were in attempts to save the lives of babies who were so severely damaged at birth as to preclude any kind of successful treatment. Care is taken at his hospital in all cases of erythroblastosis to correct existing dehydration, acidosis, hypoglycemia, hypocalcemia, hypoprothrombinemia, hypoproteinemia, anemia and anoxia. The author concludes that in all cases of severe erythroblastosis fetalis treatment should be with replacement transfusion. Only the mild conditions can be temporized with, and some of the apparently mild ones turn out to be severe enough to cause death or result in brain damage. In case of doubt as to the severity of the immunization, the baby should receive replacement transfusion.

## Kentucky Medical Journal, Bowling Green

### 47:77-115 (March) 1949

Retropubic Surgery. R. Lich Jr. and J. E. Mauer.—p. 81.
X-Ray Therapy for Non-Malignant Conditions. M. R. Walsh.—p. 86.
Present Day Treatment of Pneumonias. F. A. Scott.—p. 91.
Diagnosis and Treatment of Intrapulmonary Lesions. J. S. Harter. —p. 95.
Total Hysterectomy. E. L. Henderson and J. L. Fuller.—p. 100.

### 47:117-161 (April) 1949

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## Michigan State Medical Society Journal, Lansing

### 48:257-408 (March) 1949

*Vagotomy: Follow-up Report on 53 Cases. D. A. Cameron, C. W. Burt and W. M. Tuttle.—p. 301.
Cancer of Cervix Uteri in Young Women. A. B. Procailo and D. A. Campbell.—p. 309.
Pseudomyxoma Peritonei of Ovarian Origin: Report of 3 Cases. H. M. Nelson and M. S. Sharp.—p. 314.
Granulosa Cell Carcinoma of Ovary with Long-Delayed Metastasis. D. C. Beaver and A. W. Eckhous.—p. 319.
Acute Glomerulonephritis: Observations in 53 Children. Ilse Gorbach. —p. 323.
Pathological Alterations of Spinal Fluid Pressure. R. J. Kalthoff. —p. 330.
Chronic Osteomyelitis: Treatment by Split-thickness Skin Grafts. C. E. Stebbins.—p. 334.
Procaine Penicillin with Aluminum Monostearate: Serum Concentrations After Oral and Intramuscular Administration. Jean M. Robinson.—p. 337.
Anemia in Babies Delivered by Cesarean Section: Its Possible Prevention. R. S. Siddall and R. H. West.—p. 342.
Collagen Diseases. L. L. Stewart.—p. 344.
Acute Myocardial Infarction. H. L. Abbott and R. A. Gerisch.—p. 347.
Perforation of Rectosigmoid Due to Benign Tumors: Report of 2 Cases. T. C. Arminski.—p. 349.
Aureomycin in Dendritic Keratitis: Case Report. H. B. Appelman and A. S. Hale.—p. 352.
Unusual Gastrointestinal Diseases: Roentgenological and Clinical Studies in 8 Cases. H. Caumartin.—p. 353.

**Vagotomy.**—Cameron and co-workers performed vagotomy for chronic peptic ulcer on 53 patients—50 men whose average age was 42.2 years and 3 women between the ages of 26 and 61 years. Vagotomy alone was carried out in 50 cases and was combined with gastroenterostomy in 3 cases. Forty-three patients had duodenal ulcers; 4 had gastric ulcers; 4 had marginal ulcers, and 2 patients proved postoperatively not to have had an ulcer, although both had roentgenographic indications, alleged bleeding episodes and symptoms suggesting peptic ulcer. Preoperative roentgenologic examination was performed in 47 patients, but a definite ulcer niche was demonstrated in only 12. The remainder had secondary indications, local tenderness, spasticity and deformity of the duodenal bulb. Transthoracic vagotomy was performed on 39 patients and abdominal vagotomy on 14. The transthoracic approach is preferred, because complete section of the vagi is essential and it is more easily accomplished by this route. One patient, who was admitted to the hospital with a clinical diagnosis of sublethal gastrointestinal bleeding, died eight hours after vagotomy. Postoperative follow-up of 45 patients, for twelve months in the majority of cases, revealed an average reduction of free hydrochloric acid secretion of 25 to 30 per cent in all specimens. Approximately 50 per cent reduction in average volume of night secretion and approximately 60 per cent reduction in average free acidity was noted. Forty-eight patients were immediately relieved of their unpleasant symptoms. They began almost immediately to follow unrestricted diets and gained weight, the average weight gain being about 13 pounds (6 Kg.). Fifteen patients had varying degrees of difficulty due to gastric retention, and 19 had diarrhea, which was severe only in the rare instances. The authors do not believe gastrointerostomy or pyloroplasty necessary where there is no preoperative gastric retention. In this short follow-up period they did not find it necessary to reoperate for gastric retention. Vagotomy alone can be expected to produce satisfactory results in approximately 90 per cent of cases of peptic ulcer.

## Military Surgeon, Washington, D. C.

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Newer Trends in Treatment of Tuberculosis. R. J. B. Hibbard. —p. 202.
*Food Requirements in Arctic Regions. G. L. Orth.—p. 204.
Psychiatrist in Dispensary. P. B. Phillips.—p. 207
Observations of Effect of Vaccination on Epidemic of Influenza Due to Virus A at Fort Lewis, Washington. R. A. Radke.—p. 211.
Hygiene and Sanitation as They Have Influenced Health of People; II. Present Day Eating-Utensil Sanitation. J. G. Cumming and N. E. Yongue.—p. 216.
Arthritis. E. R. Eaton.—p. 223.

**Food Requirements in the Arctic Regions.**—Orth says that precise information is sought on every phase of nutrition in the arctic regions, but the most important problem yet to be solved is that of man's water balance, which is made extremely difficult because of lack of fluids in the ration. Rations containing a considerable quantity of fluid will freeze and break the can or container. This is further enhanced by the fact that repeated freezing and thawing cause deterioration in taste, color and nutritive value, leading to reduced consumption. Canteens, even if filled at a water point, must be carried under the outer clothing to remain in a fluid state. Experiments disclosed that at —50 F. and at an altitude of approximately 600 feet, it took 200 cc. of fuel (gasoline) to melt enough snow to give 600 cc. of water. To melt ice would take less fuel, but it would take more than half a gallon of gasoline to get sufficient water for one man. The lack of sufficient fluids in the diet to maintain a positive water balance causes a change in disposition, sullenness, loss of appetite and chronic thirst, and then discipline begins to suffer. The final step is dehydration exhaustion, which may take as little as two days in the Arctic. Eating of snow and ice can delay this collapse, but the quantity of fluid obtainable in this way will not be great, because of the soreness of the mouth and the freezing of the lips and face incident to the constant cold applications. Required caloric intake under average conditions of physical activity is inversely proportional to temperature. Therefore, when prevailing temperatures in Arctic areas are subzero over periods of more than one week, the ration will be appropriately adjusted to provide a minimum of 4,400 calories per man per day. Experiments with troops in the cold winter months in Northern Canada and Alaska have indicated that an additional 15 to 25 per cent may be added to this figure under very adverse conditions and where heavy work is necessary.

## Minnesota Medicine, St. Paul

**32**:225-336 (March) 1949

Diagnosis and Treatment of Neurosyphilis. H. W. Woltman and R. R. Kierland.—p. 249.
Do We Know Where We're Going? E. H. O'Connor.—p. 258.
Benign Strictures of Biliary Passages. L. M. Larson and J. H. Rosenow.—p. 264.
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## Missouri State Medical Assn. Journal, St. Louis

**46**:157-236 (March) 1949

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Spontaneous Rupture of Uterus in Late Pregnancy Accompanied by Placenta Accreta. M. H. Meyerhardt.—p. 177.
Glutamic Acid in Treatment of Mentally Handicapped Children: Review of Background. R. W. Clapp.—p. 181.
Surgical Management of Cancer Patients: Important Considerations. H. M. Wiley and E. D. Sugarbaker.—p. 182.

**46**:237-316 (April) 1949

Tumors of Peripheral Nervous System. A. P. Stout.—p. 255.
Tumor Seminar. A. P. Stout.—p. 259.

## New England Journal of Medicine, Boston

**240**:357-402 (March 10) 1949

Management of Potentially Infected Obstetric Case. E. G. Waters. p. 357.
*Intensive Chrysotherapy (with Lauron) in Rheumatoid Arthritis. H. H. Friedman and O. Steinbrocker.—p. 362.
*Subtotal Gastrectomy or Vagotomy for Peptic Ulcerations: Early Results and Postoperative Symptoms. R. Warren and E. C. Meadows. —p. 367.
Development of Cardiac Murmurs in Successfully Treated Cases of Bacterial Endocarditis. R. T. Beebe and J. K. Meneely Jr.—p. 372.
Syphilis. G. M. Crawford.—p. 374.
Chronic Ulcerative Colitis.—p. 384.
Chronic Ulcerative Colitis, with Pseudopolyposis and Adenocarcinoma; Portal Cirrhosis of Liver, Postatrophy Type.—p. 388.

**Chrysotherapy in Rheumatoid Arthritis.**—Friedman and Steinbrocker report the results of intensive and accelerated gold therapy in 18 patients with active rheumatoid arthritis in various stages. Sixteen patients were treated with aurothioglycanilide (lauron®), one with aurothioglucose (solganol-B oleosum®) and another with gold sodium thiomalate (myochrysine®). The dosage ranged from 0.9 to 10 Gm. administered over a period of six to eight weeks. The initial results, immediately after completion of the gold therapy, were as follows: complete remission of signs, 1 case; slight improvement, 2 cases, and no improvement, 15 cases. The patient who had a complete remission subsequently relapsed. Complete remission of symptoms and signs occurred in 2 other patients three and six months, respectively, after intensive chrysotherapy, and each had maintained that status for thirteen months at the time of reporting. These may be regarded as initial, delayed responses but may have been spontaneous. Large and accelerated doses of aurothioglycanilide did not exert impressive palliative or suppressive effects on rheumatoid arthritis. The use of the large doses of gold salts was not attended by an increased number of reactions.

**Results of Gastrectomy and Vagotomy.**—Warren and Meadows made an analysis of 120 operations performed for peptic ulceration. Their aim was to compare the results following subtotal gastrectomy and those following vagotomy. The mortality was 3.3 per cent among 89 subtotal gastrectomies and 0 among 28 vagotomies. Fifty-four patients who had subtotal gastrectomy and 22 patients who had vagotomy were examined four to twenty-four months after operation. There was 1 early recurrence of peptic ulceration in the former group, and there were 3 in the latter. The authors have confirmed the observations of Allen that the incidence of unfavorable side effects was quantitatively comparable in the two groups and have concluded with him that for the time being the use of vagotomy should be restricted to patients with anastomotic ulcer and to young patients without pyloric stenosis and with a presumably strong emotional phase of gastric secretion.

## New York State Journal of Medicine, New York

### 49:449-576 (March 1) 1949

Mechanism of Structural Changes in Scoliosis: Preliminary Report. A. M. Arkin.—p. 495.

Carcinoma of Cervix Uteri: Study of 328 Cases. J. W. Karr, A. L. Grohowski, G. J. Baron and others.—p. 500.

Orthopedic Management of Foot Problems in Children. F. L. Liebolt. —p. 505.

Classification of Bone Diseases. I. Snapper.—p. 511.

Relation of Single Nodules to Cancer of Thyroid Gland. J. C. McClintock and J. J. Farrell.—p. 516.

Sympathectomies. F. S. Wetherell.—p. 519.

Gastrointestinal Anomalies. C. D. Sawyer.—p. 523.

Planning for the Chronically Ill—a Cooperative Task. J. H. Kinnaman. —p. 527.

Ramsay Hunt's Syndrome. J. H. Melant.—p. 531.

Thephorin: New Histamine Antagonist in Symptomatic Treatment of Allergy. E. Schwartz and H. Liebowitz.—p. 533.

Treatment of Pneumonia with Penicillin: Comparison of Penicillin in Water-in-Oil Emulsion and Penicillin in Water Solution. H. H. Coppersmith, W. Perkins, J. Leland and others—p. 535.

Allergy. A. A. Eggston.—p. 539.

Psychodynamics of Child Behavior. M. L. Blumberg.—p. 542.

## North Carolina Medical Journal, Winston-Salem

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Conceptions and Misconceptions About Psychiatry. N. Q. Brill. —p. 106.

Geniculate Ganglion Pain. O. B. Ross Jr.—p. 114.

Extraction of Ureteral Stones with Looped Catheter. J. S. Rhodes. —p. 117.

Management of War Wounds, with Reference to Prevention and Treatment of Clostridial Infections: Analysis of Eighteen Cases. G. R. Benton Jr.—p. 120.

Preventive Mental Hygiene in North Carolina. C. J. Gamble.—p. 129.

Hemolytic Anemia Due to Sulfadiazine: Report of Case. D. P. Boyette and A. H. London Jr.—p. 132.

Tick Paralysis: Report of Two Cases in North Carolina. W. J. Perry and R. B. Ragland.—p. 133.

## Proc. of Staff Meet. of Mayo Clinic, Rochester, Minn.

### 24:149-180 (March 30) 1949

Macrocytic Anemia of Pregnancy Refractory to Vitamin $B_{12}$ Therapy; Response to Treatment with Folic Acid: Report of Case. Lois A. Day, B. E. Hall and Gertrude L. Pease.—p. 149.

*Aureomycin: Studies on Absorption, Diffusion and Excretion. W. E. Herrell and F. R. Heilman.—p. 157.

Potential Reversibility of Rheumatoid Arthritis. P. S. Hench.—p. 167.

### 24:181-212 (April 13) 1949

Effect of Hormone of Adrenal Cortex (17-Hydroxy-11-Dehydrocorticosterone: Compound E) and of Pituitary Adrenocorticotropic Hormone on Rheumatoid Arthritis: Preliminary Report. P. S. Hench, E. C. Kendall, C. H. Slocumb and H. F. Polley.—p. 181.

Cardiac Clinics. CXXVII. Congenital Communication Between Left Ventricle and Right Atrium: Co-Existing Ventricular Septal Defect and Double Tricuspid Orifice. E. L. Perry, H. B. Burchell and J. E. Edward.—p. 198.

Intraperitoneal Hemorrhage from Coronary Vessels of Uterine Leiomyoma. W. F. Hasskarl.—p. 207.

**Aureomycin.**—According to Herrell and Heilman attempts to study the aureomycin content of various body fluids in human beings have not been uniformly satisfactory. They describe the method in use in the laboratories of the Mayo Clinic, which has given adequately consistent results. Samples of serum or other body fluids for assay are taken at once to the laboratory and stored in the frozen state, in a chamber refrigerated with solid carbon dioxide. This is an essential part of the procedure, because aureomycin is unstable in the presence of serum or other body fluids when these samples are held at room temperature. Aureomycin is so labile that a delay of an hour or more in freezing the samples results in a serious fall in titer. Storage overnight in an ordinary electric refrigerator is attended by complete loss of active aureomycin in some samples. The laboratories use a simple tube dilution method employing thioglycollate broth and incubation overnight (sixteen hours) at 30 C. for assay. The test organism was Bacillus no. 5, a strain of Bacillus cereus used by Dornbush and Pelcak for assays of aureomycin. The authors used the described procedure for the study of the absorption, diffusion and excretion of aureomycin in human beings, to whom the antibiotic agent was administered in amounts which were regarded as therapeutically effective. After its absorption aureomycin diffuses readily into the cerebrospinal fluid in amounts which might be considered therapeutically effective. Studies of placental transmission indicate that aureomycin diffuses through the placenta and is available in the fetal circulation. When therapeutically effective amounts are present in the serum, diffusion occurs into the pleural fluid. Aureomycin appears to be concentrated in the normal hepatic system and is excreted in the bile. Large amounts of aureomycin are constantly excreted in the urine of patients receiving this antibiotic. It also has been found in the liver, kidney, spleen and lung.

## Psychoanalytic Quarterly, Albany, N. Y.

### 18: 1-136 (Jan.) 1949. Partial Index

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Schreber's Delusion of End of World. M. Katan.—p. 60.

Observations of Primary Form of Anhedonia. I. P. Glauber.—p. 67.

Anal Sensations and Feelings of Persecution. J. A. Arlow.—p. 79.

## Public Health Reports, Washington, D. C.

### 64:331-354 (March 18) 1949

Relationship Between Infant Mortality and Socioeconomic Factors in Urban Areas. M. E. Altenderfer and Beatrice Crowther.—p. 331.

Effect of Sodium Fluoracetate (1080) in Poisoned Rats on Plague Diagnosis Procedures: Preliminary Report. I. Gratch, P. L. Purlia and M. L. Martin.—p. 339.

"Infection Unit" and "Index of Aggregation": Suggested Epidemiologic Terms. F. C. Forsbeck.—p. 343.

### 64:355-402 (March 25) 1949

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The Accident-Prone Individual. F. Alexander.—p. 357.

Accident Prevention—State Health Department's Responsibility. F. C. Beelman.—p. 363.

Accident Prevention Research. B. G. King.—p. 373.

Home Environment and Accidents. L. M. Board.—p. 383.

Accident Facts from Accident Fatalities. Evelyn H. Halpin.—p. 388.

## Puerto Rico J. Pub. Health & Trop. Med., San Juan

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Rodents and Fleas in Plague Epizootic in Rural Area of California. K. F. Meyer and R. Holdenried.—p. 201.

Immunity in Bacillary Dysentery. L. M. González and P. Morales Otero.—p. 221.

Preliminary Note on Routine Culture Methods for Endamoeba Histolytica. B. Anastopoulos.—p. 240.

Effect of Chloramine on Miracidia of Schistosoma Mansoni. N. Biaggi and R. Pirazzi.—p. 246.

## Radiology, Syracuse, N. Y.

### 52:309-464 (March) 1949

Scientific Evaluation of Diagnostic Procedures. L. H. Garland.—p. 309.

*Angiocardiography in Congenital Heart Disease of Cyanotic Type with Pulmonic Stenosis or Atresia: I. Observations on Tetralogy of Fallot and "Pseudo-Truncus Arteriosus." R. N. Cooley, H. T. Bahnson and C. R. Hanlon.—p. 329.

Aid of Arteriograms in Diagnosis and Treatment of Intracranial Aneurysims. J. L. Poppen.—p. 347.

Angiocardiographic Measurement of Normal Great Vessels. C. T. Dotter and I. Steinberg.—p. 353.

Roentgen Findings of Unusual Interest in Perforation of Colon. C. Gottlieb, H. S. Sharlin and W. Peck.—p. 359.

Linear Atelectatic Sign in Intra-Abdominal Lesions. J. L. Marks and A. Nathan.—p. 363.

Dysgerminoma: Case with Pulmonary Metastases; Result of Treatment with Irradiation and Male Sex Hormone. P. E. Russo and J. W. Kelso.—p. 367.

Hematologic Effects of Ionizing Radiations. L. O. Jacobson, Edna K. Marks and E. Lorenz.—p. 371.

Lethal Dose of Total-Body X-Ray Irradiation in Swine. J. L. Tullis, C. F. Tessmer, E. P. Cronkite and F. W. Chambers Jr.—p. 396.

Aberrant Tissue Developments in Rats Exposed to Beta Rays: Late Effect of $P^{32}$ Beta Rays. P. S. Henshaw, R. S. Snider and E. F. Riley.—p. 401.

Use of Plastic Tracheal Cannula with Report of Case. J. C. Barnett, I. A. Polisar and R. S. Polisar.—p. 416.

Rapid Cassette Changer for Angiocardiography. M. A. Sisson.—p. 419.

Photographic Effect of Various Radiations on Special Dental Packets. R. F. Cowing and C. K. Spalding.—p. 423.

**Angiocardiography in Congenital Heart Disease.**—Cooley and associates state that, with the advent of surgical therapy for congenital heart disease of the cyanotic type, the necessity for an exact diagnosis has become more important. They emphasize that no single diagnostic test will provide complete understanding of the anatomic and physiologic abnormalities in a patient with congenital cyanotic heart disease. The condition in many cases may be diagnosed on the basis of the history, physical examination and conventional roentgenographic examination, with emphasis on fluoroscopic study. Examination of the blood, including gas analysis, yields additional helpful information, while the more complex physiologic tests, including catheterization of the heart chambers, are often invaluable. Angiocardiography is an additional valuable weapon in this armamentarium, but for full realization of its value one should employ it, whenever possible, in conjunction with other studies. The authors have used angiocardiography in 75 patients. Usually they inject a 70 per cent solution of iodopyracet (diodrast®). A total of 140 injections have been made either into the basilic vein of the left arm or into the external jugular vein, without serious reactions. Histories are given of 9 patients in order to emphasize the advantages and shortcomings of the method in preoperative evaluation. Seven patients had the tetralogy of Fallot and 2 had a truncus arteriosus. All were subjected to operation, and in 1 instance postmortem studies were available. An overriding aorta could be demonstrated in all instances, as well as the position of the descending aorta. An interventricular septal defect may sometimes be directly demonstrated. Direct visualization of the pulmonary conus is so difficult that it is untrustworthy, but presumptive evidence of stenosis may often be obtained. It is not possible by angiocardiography alone to distinguish pulmonary atresia from a high degree of stenosis. The presence and character of the pulmonary arteries may be reliably determined. Failure to demonstrate the proximal portions of the pulmonary artery does not rule out the possibility of a successful anastomosis.

## Southern Medical Journal, Birmingham, Ala.

### 42:153-262 (March) 1949

Supravesical Extraperitoneal Cesarean Section: Section of Choice for the Infected Patient. B. Word and E. B. Oliver.—p. 153.
Management of Early Fractures of Facial Bones. G. S. Fitz-Hugh.—p. 161.
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*Diagnosis and Treatment of Hiatal Diaphragmatic Hernia. P. P. Vinson.—p. 176.
Physiology and Clinical Significance of Reno-Ureteral Colic. R. A. Downs.—p. 180.
Management of Acute Coronary Occlusion with Myocardial Infarction. G. Burch.—p. 186.
*Treatment of Plantar Warts by Single Dose Method of Roentgen Ray. J. L. Pipkin, C. F. Lehmann and A. Ressmann.—p. 193.
When Does a Patient Need a General Practitioner? C. D. Leake.—p. 202.
When Does the General Practitioner Need a Surgeon? R. L. Sanders.—p. 209.
Two Thousand Hemorrhoidectomies Using the Fansler Technic. R. F. Elkins.—p. 214.
Lymphogranuloma Venereum Associated with Squamous Cell Carcinoma. R. L. Swink.—p. 217.
Management of Vertical Heterophoria of Paretic Origin. J. L. Berg.—p. 220.
Current Problems in Medical Education. D. G. Anderson.—p. 224.
Stilbestrol in Endometriosis. W. Bickers.—p. 229.
Urinary Incontinence Associated with Extravesical Ureteral Opening in Female. C. M. Johnson and R. F. Sharp.—p. 230.

**Hiatal Diaphragmatic Hernia.**—Vinson reports 147 patients with protrusion of a portion of the stomach through the esophageal opening in the diaphragm. Twenty-one of these patients, 15 women and 6 men between the ages of 3 and 78, had herniation of the stomach through the esophageal hiatus beside the esophagus, the so-called paraesophageal type of hernia. One hundred and ten patients, 64 women and 46 men had a congenital shortening of the esophagus with a partially thoracic stomach. Sixteen patients, 9 women and 7 men, had a short esophagus and a portion of the stomach above the diaphragm but with definite cicatricial stricture at the junction of the esophagus and the herniated portion of the stomach. Flatulence, distress after meals, a feeling of fulness in the epigastrium and "acid indigestion," all of which may be intensified on the patient's lying down, may be noted in either type of hernia and may begin at any age. Epigastric pain with radiation substernally and down one or both arms is a frequent complaint. With ulceration that occurs at the junction of the esophagus and hernial sac in the short esophageal type of hernia bleeding often occurs. Dysphagia is the most frequent symptom but is rarely constant or severe enough to interfere with nutrition. The most satisfactory and the most accurate method for detection and differentiation of hiatal esophageal hernia is roentgenoscopic examination. In the absence of significant symptoms the condition rarely requires treatment. In the short esophageal type of hernia, dysphagia can almost always be completely relieved by passing dilating sounds over a guiding thread through the esophagus into the stomach. Spasm, pain and bleeding are also usually abolished by dilatation. Reduction of this kind of hernia by surgical measures is rarely indicated. Operative repair of the hernia is advisable when other symptoms than dysphagia are present in patients who have paraesophageal hernia and are in good physical condition.

**Plantar Warts.**—Pipkin and his co-workers treated 1,000 patients with a total of 1,744 plantar warts with a single dose of superficial roentgen rays. Shaving off the overlying hyperkeratotic epidermis and the surrounding keratotic collar is essential. The surface to be irradiated is meticulously outlined with ink. The window in the protective lead shield should be from 1 to 1.5 mm. in diameter larger than the lesion to be treated. The window is fitted exactly over the lesion, and the shield is pressed in place with glue and further fixed with adhesive tape. Warts of 6 mm. in diameter occurred most frequently in this series. To a wart of this size the average single and total dose of 2,040 r was delivered to a portal 7 mm. in diameter. The number of roentgens to be applied to the wart is solely dependent on its size: warts the diameter of which is 2 mm. or less are better treated by electrofulguration, liquid oxygen or some other destructive process; if the lesion is larger than 12.5 mm. it should not be treated with roentgen rays either. Six hundred and seventy of the patients had single lesions, and 330 had two or more verrucae distributed over the soles of one or both feet. There were twenty-four mother-daughter type warts. All patients were observed after treatment for periods of four months to twenty-one years. Of these, 910 (91 per cent) were cured and there were 90 (9 per cent) failures. The percentage of cures and failures varied from 85.1 to 100 and 14.9 to 0.0, respectively, depending on after-care, type and localization of plantar wart and whether or not the picture was complicated by previous scarring treatment or orthopedic problems. There were no unfortunate sequelae.

## West Virginia Medical Journal, Charleston

### 45:53-78 (March) 1949

Herpes Zoster Ophthalmicus: Sodium Iodide Therapy. T. W. Moore.—p. 53.
Experience with Lumbar Sympathectomy in Vascular Diseases of Lower Extremity. C. D. Hershey.—p. 56.
Histamine Diphosphate Used Topically in the Eye. E. M. Shepherd.—p. 62.
Polycythemia Vera (Erythremia) with Coronary Occlusion and Myocardial Infarction: Report of Case Treated with Anticoagulants. J. S. Pearson and Jean F. Noertker.—p. 65.

### 45:79-100 (April) 1949

*Evaluation of Globin Insulin in Treatment of Diabetes Mellitus. W. M. Sheppe and W. M. Sheppe Jr.—p. 79.
Surgical Treatment of Congenital Recto-Urethral Fistula (Report of Case). J. E. Cannaday and C. J. Harkrader Jr.—p. 83.
Trends in Tuberculosis Programs. Mary Dempsey.—p. 86.
Carcinoma of Uterus. B. T. Beasley.—p. 88.

**Evaluation of Globin Insulin.**—The Sheppes state that modifications of insulin differ from the unmodified form in delaying, prolonging, reducing or intensifying the effects of the basic substance. The conclusions presented here were arrived at from an analysis of 386 diabetic patients currently under observation. One hundred twenty-five of these patients were being treated with the combination of globin and crystalline insulin. This combination provides the most efficient insulin control for the largest percentage of patients with severe and moderately severe diabetes. Globin insulin is a clear, stable solution with a moderately rapid effect which reaches its peak of intensity in eight to sixteen hours after injection, with progressively waning effect from the sixteenth to the twenty-fourth hour. It is relatively nonallergenic. When used alone, its action is somewhat similar to that of a 2:1 mixture of regular and protamine insulin. Its maximum activity is exerted during the period when insulin is most needed to control postprandial hyperglycemia. The total duration of effect is four to twenty-four hours, depending on the size of the dose. Nocturnal hypoglycemia is avoided, since the period of greatest intensity of action is from 4 p. m. to 8 p. m. If reactions occur at this time, they are easily combated or prevented by shifts in carbohydrate distribution. Extemporaneous insulin *mixtures* have been found to be of great advantage in the treatment of patients with moderately severe and severe diabetes. Globin insulin is well adapted to mix easily with other clear insulins. In such mixtures it retains its individual physical properties. For this reason, its effect is predictable with consequent ease of adjustment of dosage.

## British Journal of Venereal Diseases, London

### 25:1-44 (March) 1949. Partial Index

Granuloma Inguinale. P. A. Clearkin.—p. 1.
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## British Medical Journal, London

### 1:423-464 (March 12) 1949

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**Hypertension in Rats Following Choline Deficiency.**—Hartroft and Best produced a severe renal lesion in rats fed a diet deficient in choline. All the rats in which a severe degree of residual renal damage was produced by a short period of choline deficiency during early life later showed definite hypertension. *The average blood pressure in this test series was 195* mm. of mercury as determined by arterial cannulization, while that of the controls was 118 mm. of mercury. The average
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Disease of Upper Air Passages in Relation to Pulmonary Tuberculosis. D. B. Kelly.—p. 726.
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Basophilic Infiltration in Neurohypophysis. M. L. Bayoumi.—p. 742.
Rathke's Cleft and Its Cysts. M. L. Bayoumi.—p. 745.
Fetal Cell Adenomata of Hypophysis Cerebri. M. L. Bayoumi.—p. 750.
Cancer and Co-ordination of Contact and Inductive Influences. M. Copisarow.—p. 754.
Diabetes Mellitus—Revised Conception of Its Standardisation. A. Grunberg and W. G. Roberts.—p. 757.

## Lancet, London

### 1:381-424 (March 5) 1949

*Retropubic Prostatectomy: Experiences Based on 757 Cases. T. Millin, C. L. O. Macalister and P. M. Kelly.—p. 381.
Growth of Preschool Child in London. A. T. Gore and W. T. Palmer. —p. 385.
Paroxysmal Cold Hemoglobinuria of Non-Syphilitic Type. L. K. Malley and M. D. Hickey.—p. 387.
Survival of Transfused Erythrocytes from Donor with Nocturnal Hemoglobinuria. J. V. Dacie and P. L. Mollison.—p. 390.
*Esophageal Lesions* in Sclerodactyly. W. A. Bourne.—p. 392.
Acquired Resistance to Proguanil (Paludrine) in Plasmodium Vivax. D. R. Seaton and E. M. Lourie.—p. 394.
*Streptomycin in Non-Gonococcal Urethritis. R. R. Willcox.—p. 395.

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Value of Systemic Penicillin in Finger-Pulp Infections: Controlled Trial of 169 Cases. S. H. Harrison, Elizabeth Topley and J. Lennard-Jones.—p. 425.
Clinical Method of Assessing Analgesics. A. J. H. Hewer, C. A. Keele, K. D. Keele and P. W. Nathan.—p. 431.
*March Hemoglobinuria. M. Lubran and J. Sakula.—p. 435.
Inhalation of Stomach Contents. A. Willcox.—p. 438.
Tuberculin-Neutralising Factor in Serum of Patients with Sarcoidosis. A. Q. Wells and J. A. H. Wylie.—p. 439.

### 1:465-508 (March 19) 1949

Syndrome of Diabetes Mellitus and Its Causes. H. P. Himsworth. —p. 465.
Injuries and Death from Lightning. M. J. G. Lynch and P. H. Shorthouse.—p. 473.
Tuberculous Abscess at Site of Penicillin *Injections.* G. B. Forbes and F. G. St. C. Strange.—p. 478.
Long-Acting Preparation of Testosterone. E. Carlinfanti, F. D'Alò and L. Cutolo.—p. 479.

**Retropubic Prostatectomy.**—Millin and associates review observations in 757 cases of retropubic prostatectomy carried out by them during the years 1945 to 1948. Since the first report on this method in 1945 a number of modifications have been suggested, but the authors remain unconvinced that any major departure from the established technic has proved its worth. Their overwhelming preference for the retropubic approach is proved by the fact that it was used in 757 of a total of 919 cases of prostatic obstruction. They reserve the endoscopic route for minor subcervial lobes and the medium-sized glands in the very poor surgical risk. In the latter group, they are employing the open technic more and more. For a complete

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

## British Heart Journal, London

### 11:1-108 (Jan.) 1949

Relationship Between Electrical and Mechanical Events in Cardiac Cycle of Man. B. Coblentz, R. M. Harvey, M. I. Ferrer and others.—p. 1.
R Waves Interrupting T Waves. F. H. Smirk.—p. 23.
Lay Cardiologists. T. East.—p. 37.
Duration of Normal Heart Sounds. A. A. Luisada, F. Mendoza and M. M. Alimurung.—p. 41.
Loud-Speaker Stethoscope for Clinical Teaching. A. F. Phillips.—p. 48.
Effect of Adenosine Triphosphate on Electrocardiogram of Man and Animals. E. J. Wayne, J. F. Goodwin and H. B. Stoner.—p. 55.
Familial Cardiomegaly. W. Evans.—p. 68.
Effect of Digitalis on Venous Pressure. P. Wood and J. Paulett.—p. 83.

## British Journal of Cancer, London

### 2:309-404 (Dec.) 1948. Partial Index

Carcinogenic Hydrocarbons: Chemical Constitution and Carcinogenic Activity. G. M. Badger.—p. 309.
Clinical Trials of Tetra-Sodium 2-Methyl-1 : 4-Naphthohydroquinone Diphosphate, in Conjunction with X-Ray Therapy. J. S. Mitchell. —p. 351.
Polarographic Analysis of Normal and Pathologic Serums. Alice M. Robinson.—p. 360.
*Lung Adenomas Induced by Urethane in CBA Mice. F. R. Selbie and A. C. Thackray.—p. 380.
Influence of Testosterone Propionate on Induction of Subcutaneous Tumors in Mice by 20-Methylcholanthrene. J. Flaks.—p. 386.

**Lung Adenomas Induced by Urethane in Mice.**—Selbie and Thackray report studies on 75 male and 75 female CBA mice, 8 to 12 weeks old. They divided these mice into five groups of 30, each group containing an equal number of male and female mice. Urethane (ethyl carbamate) was administered to three groups, and the two other groups were kept under the same conditions so that the normal incidence of tumors could be estimated. Urethane was used in a 5 per cent solution in distilled water and was administered twice weekly by intraperitoneal injection in a dose of 0.2 cc. to the first group of mice, by stomach tube in a dose of 0.4 cc. to the second group and by nasal instillation of about 0.05 cc. to the third group. A considerable number of mice died from intercurrent infection. They were rejected in assessment of the results. Seven months from the beginning of the administration of urethane the surviving mice were killed. Tumors were found only in the lungs. Pulmonary adenomas were found in all of 24 CBA mice receiving the drug by intraperitoneal injection, in all of 9 CBA mice given the drug orally and in 4 of 20 CBA mice given the drug by intranasal instillation, whereas there was only 1 tumor in a comparable group of 51 CBA mice. From histologic examination of the adenomas in these mice and of tumors in early stages, it is concluded that the tumors arise from alveolar epithelium and are not preceded by pneumonic changes. It is suggested that urethane acts by lowering resistance to some tumor-stimulating influence, possibly a virus in the host.

## British Journal of Experimental Pathology, London

### 29:484-610 (Dec.) 1948. Partial Index

Investigation of Immunologic Relationships Between Viruses of Variola, Vaccinia, Cowpox and Ectromelia by Neutralization Tests on Chorio-Allantois of Chick Embryos. K. McCarthy and W. W. Downie. —p. 501.
Transportation of Anaphylactogenic Property by Eosinophil. Z. Z. Godlowski.—p. 511.
Electrophoretic Studies on Serum of Golden Hamsters Infected with Leishmania Donovani. G. Ada and J. D. Fulton.—p. 524.
Reactivation of Neutral Mixtures of Influenza Virus and Serum by Virus Inactivated by Heat. A. Isaacs.—p. 529.
Changes in Metaphysis of Long Bones During Development of Rickets. J. M. Bailie and J. T. Irving.—p. 539.
Meningo Encephalomyelitis Virus: Isolation and Immunological Properties. G. W. A. Dick, K. C. Smithburn and A. J. Haddow.—p. 547.
Antigenic Function of Simple Chemical Compounds: Correlation of Antigenicity with Chemical Reactivity. P. G. H. Gell, C. R. Harington and R. Michel.—p. 578.
Physical Properties of Viruses of Newcastle Disease, Fowl Plague and Mumps. W. J. Elford, C. M. Chu, I. M. Dawson and others.—p. 590.

## British Journal of Ophthalmology, London

### 33:131-196 (March) 1949. Partial Index

[illegible] R. F. Lowe.—p. 131.
[illegible] Content of Fresh and Old Ox Cornea. H.

Advocacy of External Dacryocystorhinostomy. F. N. Shuttleworth. —p. 183.

## British Journal of Surgery, Bristol

### 36:225-336 (Jan.) 1949. Partial Index

Plain Radiography in Intraspinal Protrusion of Lumbar Intervertebral Disks: Correlation with Operative Findings. A. C. Begg and M. A. Falconer.—p. 225.
*Thorotrast Pyograms in Cerebral Abscess. G. K. Tutton and W. H. T. Shepherd.—p. 240.
Study of Post-Operative Pulmonary Atelectasis. J. Goodwin.—p. 256.
Observations on Functional Anatomy of Inguinal Hernia and Its Bearing on Operative Treatment. D. H. Patey.—p. 264.
Total Denudation of Penis. A. R. Banham.—p. 268.
*Thymoma, with Report of 5 Cases. H. Reid and R. Marcus.—p. 271.
Anal Intermuscular Septum. F. R. Wilde.—p. 279.
Investigation and Treatment of Arterial Disturbances in Lower Limbs. C. Jones and R. E. Steiner.—p. 286.
Injection Treatment of Varicose Veins: Radiologic and Histologic Investigations of Methods. J. B. Kinmonth and D. J. Robertson.—p. 294.
Spontaneous Herniation Through Transverse Mesocolon: Review of Literature and Report of Case. H. W. Gallagher.—p. 300.
Case of Osteitis Fibrosa Cystica. E. W. Thomas.—p. 306.
Traumatic False Aneurysm Simulating Bone Sarcoma. D. C. Bowie and A. W. Kay.—p. 310.
Solitary Thyroid Nodule and Thyrotoxicosis. H. L. M. Roualle.—p. 312.
Pott's Puffy Tumor. L. Rogers.—p. 315.
Foam-Cell Granuloma in Chronic Pyonephrosis Simulating Tuberculosis. H. J. Barrie.—p. 316.
Localized Diverticulitis in Transverse Colon. H. E. Lockhart-Mummery. —p. 319.

**Thorotrast® Pyograms in Cerebral Abscess.**—Tutton and Shepherd use the term pyogram to describe the radiograms produced after instillation of thorotrast® (a colloidal suspension of thorium dioxide) into cerebral abscesses. Pyograms are valuable at any stage of a brain abscess. The first pictures always indicate the localization of the lesion and its relation to the burr hole through which it was tapped. The size of the shadow can be measured, and subsequent radiographs at frequent intervals will show whether the abscess is increasing in size and requires tapping again. As clinical signs of an enlarging abscess may be dangerously late in appearing, repeated pyograms are of great value in day to day evaluation of the course of the abscess. The authors report on 56 cases of intracranial abscesses in which pyographic studies were made. They describe the technic and the appearance of pyograms, the abscesses at special sites and the value of pyograms. The possibility of the radioactivity of thorotrast® must be considered with respect to its possible disadvantages in cerebral abscesses. Its dangers are negligible if the abscess is excised, but, when a thorotrast®-impregnated cicatrix is left, some reaction may occur. No reactions have been recorded in this series. The authors did not find a significantly high incidence of fits following the use of thorotrast® pyograms. More can be learned about brain abscesses from a systematic study of pyograms than has been possible in the past. The management of these cases is greatly assisted by the visual control which is possible by this method.

**Thymoma.**—Reid and Marcus present a historical survey of thymomas and an appraisal of their pathologic features. The clinical symptoms of a thymic tumor are few at first, and unless mass radiography is carried out their presence is not suspected until lymph node enlargement is seen or symptoms of intrathoracic pressure develop. In about half the cases symptoms of myasthenia gravis are present and lead to radiographic examination. The radiography shows a shadow which in the anteroposterior view occupies the mediastinum to one or other side of the heart shadow and in a lateral view occupies the superior mediastinum above the heart. It has to be differentiated from other mediastinal masses—especially lymphadenomas; cardiac aneurysm and pericardial cysts; mediastinal granulomas and teratomas, and congenital dilatation of the pulmonary artery. Surgical removal is the only sure method of cure. This may be difficult and dangerous, as the tumor does not remain encapsulated and may be adherent to large blood vessels and embedded in a vascular mass of adhesions. To date, 296 thymomas have been reported in the literature, 255 being malignant. Benign thymomas occur more commonly than malignant
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**Hypertension with Recovery After Nephrectomy.**—Maitland describes a case of severe hypertension with advanced retinitis and papilledema in a young woman of 20. The presenting symptom of headache, with vomiting and diplopia, suggested an intracranial lesion, but investigation revealed pathologic change in the left kidney as the likely cause. The removal of that organ with the adrenal produced a return of the blood pressure to normal in half an hour and a complete recovery from the retinal changes in a few weeks. This had been maintained at the time of writing. Reference is made to the significance of this result in relation to the experimental work of Goldblatt. It is also suggested that, if these cases can be recognized before the vascular changes elsewhere are permanent, nephrectomy offers the hope of a cure. The rarity of successful treatment in this type of case is mentioned, and stress is laid on the necessity for a most thorough investigation of the renal tract before surgical measures are advised. The author stresses the value of differential renal analysis in the general investigation of hypertensive patients.

**Paralytic Poliomyelitis.**—The paper by Russell is based on careful questioning of 100 patients (59 male and 41 female) who were convalescing from poliomyelitis and who were old enough to give a good account of their early symptoms. The prodromal stage, which consists of a brief and often slight illness lasting one or two days, is seen in less than half the cases, but neurologic symptoms occasionally appear even at this early stage. The preparalytic stage is the most critical period of the disease. Spinal symptoms in "typical" cases begin abruptly; these occurred in 95 of the 100 cases. They are of great value in diagnosis but are variable with respect to type and severity. Two or more phases of the preparalytic stage may appear, and paralysis may spread in two or more stages. The spinal symptoms may subside before paralysis develops. In "typical" cases the onset of the preparalytic stage is vague and the symptoms of a prodromal stage may appear to merge into the preparalytic stage. An unusual amount of physical activity immediately preceded the preparalytic stage in 14 of the 100 cases. Complete physical rest in bed from the onset of the preparalytic stage greatly reduces the danger of severe paralysis. Severe physical activity at this stage is almost suicidal, while the continuance of even average physical activity is dangerous. The author feels that it should be possible to prevent many of the cases of grave disease. Persons who are responsible for the care of children should learn of the ways in which the disease can present. Sports meetings and special athletic contests should, if possible, be held outside the season for poliomyelitis. During an epidemic exhausting physical activity should be avoided, and all physical activity should be avoided during minor illnesses.

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Clinical Method of Assessing Analgesics. A. J. H. Hewer, C. A. Keele, K. D. Keele and P. W. Nathan.—p. 431.
*March Hemoglobinuria. M. Lubran and J. Sakula.—p. 435.
Inhalation of Stomach Contents. A. Willcox.—p. 438.
Tuberculin-Neutralising Factor in Serum of Patients with Sarcoidosis. A. Q. Wells and J. A. H. Wylie.—p. 439.

### 1:465-508 (March 19) 1949

*Syndrome of Diabetes Mellitus and Its Causes.* H. P. Himsworth. —p. 465.
Injuries and Death from Lightning. M. J. G. Lynch and P. H. Shorthouse.—p. 473.
Tuberculous Abscess at Site of Penicillin Injections. G. B. Forbes and F. G. St. C. Strange.—p. 478.
Long-Acting Preparation of Testosterone. E. Carlinfanti, F. D'Alò and L. Cutolo.—p. 479.

**Retropubic Prostatectomy.**—Millin and associates review observations in 757 cases of retropubic prostatectomy carried out by them during the years 1945 to 1948. Since the first report on this method in 1945 a number of modifications have been suggested, but the authors remain unconvinced that any major departure from the established technic has proved its worth. Their overwhelming preference for the retropubic approach is proved by the fact that it was used in 757 of a total of 919 cases of prostatic obstruction. They reserve the endoscopic route for minor subcervial lobes and the medium-sized glands in the very poor surgical risk. In the latter group, they are employing the open technic more and more. For a complete description of the technic they refer to earlier reports, but they emphasize certain points and explain some misconceptions. They also discuss postoperative complications, such as pelvic cellulitis, osteitis pubis, suprapubic fistula, reactionary and secondary hemorrhages, postoperative stricture, incontinence, pulmonary embolus and funiculitis. On the basis of their experiences they conclude that the retropubic approach to the prostate conforms most nearly to the modern surgical ideal. Established prostatic obstruction should be relieved before renal impairment and advancing age add to the risk. Reasonably early intervention by the retropubic route offers a satisfactory functional result, with little risk and easy convalescence. The relief should be permanent, for the whole of the obstructing tissue is removed.

**Streptomycin in Nongonococcic Urethritis.**—According to Willcox treatment with penicillin or the sulfonamide drugs is not strikingly successful against nongonococcic urethritis and Reiter's disease, but many of the organisms—Bacillus coli and members of the pleuropneumonia-like group—which are thought to be possibly responsible for nongonococcic urethritis, though penicillin-resistant, are susceptible to streptomycin. The author employed single intramuscular injections of 0.2 to 1 Gm. of streptomycin in the treatment of 7 patients with nongonococcic urethritis. In 4 patients the signs were severe, with a profuse discharge and/or a grossly hazy urine, and in all of them improvement was immediate and spectacular, though in 2 cases there was a relapse which was successfully treated in the same way. Epididymitis was present in 1 case. In the 3 failures the condition before treatment was mild, with only a minimal discharge and clear urine with a few threads. The success of streptomycin therapy in this series was thus in proportion to the severity of the condition. Simple urethral and prostatic cultures were performed in all the cases, and no attempt was made to isolate pleuropneumonia-like organisms. Coliforms were obtained on culture in all 4 successful cases and in none of the 3 failures. The urethral Staphylococcus albus, which has often been reported in urethral cultures of patients with nongonococcic urethritis and is probably unconnected with the disease, proved resistant to streptomycin.

**March Hemoglobinuria.**—Lubran and Sakula report 3 cases of march hemoglobinuria in 2 private soldiers aged 18 years and in 1 aircraftman aged 20 admitted within about two weeks to one military hospital. The third patient had pronounced anemia; the symptoms of the other 2 patients conformed with the general description of the condition. The quantity of blood lost on each occasion of hemoglobinuria seldom exceeded 30 cc. Repeated losses of this order at short intervals were probably responsible for the anemia of the third patient. No spontaneous attacks of hemoglobinuria occurred during the patients' stay in the hospital, but attacks could be induced by their performing a standard exercise consisting of running and walking about 6 miles in one hour. The upright posture is essential for the development of this type of hemoglobinuria. Experiments showed that during an attack hemoglobinuria was associated with a rise in the plasma-hemoglobin level. Exercise in the upright position is associated with hemolysis, and the resulting rise in the plasma-hemoglobin level leads to the hemoglobinuria. It is suggested that in susceptible persons exercise causes the spleen to contract and expel a small number of highly fragile red cells into the blood stream. Hemoglobinuria disappeared immediately after the administration of large doses of ascorbic acid in 2 cases; in the third patient it disappeared in about three weeks. The ascorbic acid seems to lessen the amount of hemolysis or to diminish the sensitivity of the spleen. The therapeutic effect of ascorbic acid requires further study.

## Practitioner, London

### **162:**173-260 (March) 1949

Modern Concept of Cirrhosis of Liver. L. J. Davis.—p. 173.
Treatment of Hepatitis and Cirrhosis. R. E. Tunbridge.—p. 182.
Surgery of Pancreas. R. B. Cattell and K. W. Warren.—p. 188.
Tests of Liver and Pancreatic Function. N. F. Maclagan.—p. 200.
Portal Hypertension. R. M. Walker.—p. 211.
Cholecystography. R. K. Harper.—p. 217.
Pre-Frontal Leucotomy: Short Account of Surgical Surprise. M. Partridge.—p. 224.
Results of Vagotomy: Follow-Up of 29 Patients. W. Walters.—p. 232.

## Acta Chirurgica Scandinavica, Stockholm

### **97:**381-472 (Feb. 21) 1949

Benign Tumors of the Stomach: Case of Lipoma Submucosa Ventriculi Simulating Cancer of the Stomach. H. Paaby.—p. 381.
*Cystectomy in the Male, Significance of Combined Prostato-Seminal Vesiculo-Cystectomy with Special Reference to Sexual Function. R. Romanus.—p. 389.
*Gelatin and Polythene Film as Dura Substitutes and Polythene Plates as Bone Substitute in Skull Defects. E. Busch, J. Bing and E. H. Hansen.—p. 410.
Sacrococcygeal Teratomas. M. Sulamaa and E. K. Ahvenainen.—p. 417.
Post-thrombotic Varices: Results of Phlebography and Radical Operative Treatment. P. Linde.—p. 430.
Fractures of the Upper End of Humerus with Great Displacement Treated by Marrow Nailing. A. Widén.—p. 439.
Disposal of Bronchial Stump in Lobectomy and Pneumonectomy for Bronchiectasis. E. Unonius.—p. 442.
Linitis Plastica and Sclerosing Carcinoma of the Stomach (Carcinoma disseminatum Krompecher; Carcinoma fibrosum Konjetzny). K. Røjel.—p. 451.

**Cystectomy in the Male.**—Romanus reviews observations on 49 male patients who underwent cystectomies at the Surgical Clinic of "Karolinska sjukhuset" during the years 1940 to 1947. Complications, both immediate and late, were less frequent in the 28 patients in whom the prostate and the seminal vesicles were removed than in those in whom they were left intact. Despite careful preoperative examination with urethrocystography and endoscopy as well as palpation before and during the operation, it is impossible to exclude pathologic changes in the seminal vesicles and the prostate. For this reason the completeness of removal will often be questionable when these organs are left in. The experiences of 21 patients who describe their sexual function after extirpation of the bladder show that, despite the removal of both the prostate and the seminal vesicles, the potentia coeundi may be normal, that is, the erection, the course of the coitus and orgasm are normal, but without ejaculation. As secondary complications may arise from apparently normal seminal vesicles and prostate left behind at operation, these organs should be removed in all cases of malignant vesical tumor. Only in cases of clearly benign changes in patients for whom it is particularly desirable to retain fertility should the prostate and the seminal vesicles be preserved.

**Gelatin and Polythene Film in Skull Defects.**—Busch and his associates point out that several fibrin preparations were produced in the course of the extensive investigations carried out during the recent war on the plasma protein fractions. These included a pliable and elastic substance that was used by some as a substitute for the dura mater. It was preferable to earlier substitutes consisting of fascia lata transplantata, gutta-percha, rubber or metal. There was no adherence between the fibrin film and the surrounding tissues, and while the film was slowly absorbed a new membrane of connective tissue formed, covering the defect and peripherally growing together with the normal dura mater. This fibrin film was difficult to obtain. The authors give an account of experiments with gelatin and polythene films. Gelatin films were found unsuitable as a dural substitute. Animal experiments confirmed that polythene film is nonabsorbable and that after subcutaneous, intraperitoneal, intrathoracic and other applications it causes little or no tissue reaction. When it was used as a dural substitute on animals and a large number of patients, the authors had the same good results as those obtained earlier by American workers. It was demonstrated in animal experiments and in clinical tests that polythene plates are excellent bone substitutes in skull defects, being easy to procure and to mold, causing no tissue changes and not interfering with subsequent roentgen examination.

## Acta Clinica Belgica, Brussels

### **3:**461-576 (Nov.-Dec.) 1948. **Partial Index**

*Encephalitis Following Jennerian Vaccination Compared to That Following Exanthems. L. van Bogaert.—p. 461.
*Considerations on Erythroblastemia of Fetus and Newborn Infant, not Linked with Iso-Immunization by Rh Factor, with Report of Case of Congenital Volvulus of Small Intestine. P. O. Hubinont and J. Nameche.—p. 494.
New Experimental and Clinical Research on Treatment of Dyspnea with Pneumodilator Aerosols. R. Charlier.—p. 506.

**Vaccinal Encephalitis.**—Van Bogaert reports 16 cases of vaccinal encephalitis which occurred since 1931, 3 of them fatal, 64 cases of encephalomyelitis complicating chickenpox, 135 cases of disseminated encephalomyelitis occurring in the course of measles and 19 cases complicating scarlet fever. Of several concepts which have been suggested to explain the pathogenesis of encephalitis associated with eruptive diseases and of that following vaccination against smallpox, the author favors that by Glanzmann and Paul, according to whom the disseminated encephalitis which follows the exanthem is an anaphylactic phenomenon, an antigen-antibody reaction which may be observed in various eruptive diseases during the parallergic phase of the affected organism. The clinical and histopathologic analogy of the different types of encephalomyelitis may be explained easily, because they present only a form of hyperallergic reaction of the cerebral tissue, a common reaction which displays itself in different infections following a single mechanism with individual differences resulting from individual variations in sensitization. Each antigenic virus has its particular characteristics and imposes on the reaction a specific anatomicoclinical difference. The incubation period of the encephalitis varies from one exanthem to the other, but the comparison of vaccinal encephalitis with that associated with scarlet fever is suggestive. Besides individual variations, the rapidity of the formation of antibodies depends on the particularities of the septicemia and on the virulence of the infectious antigen. There is a definite immunologic relationship between the exanthem and the encephalitis. It is indicated by neurocutaneous alternation and dissociation of the hyperallergic reaction, the chronologic coincidence of the cutaneous and central hyperallergy, the specific immunity conferred by the encephalitis as well as by the exanthem, the predisposition of persons with a deficient cutaneous immunity and the histopathologic equivalence of the exanthem and of the encephalitis. The insufficiency of the pexic function of the skin brings the neuraxis, the other ectoderm desensitizer, into compensatory action in a person in whom the hematoencephalic barrier has been weakened by a previous lesion. Recent experimental work on nervous complications of revaccination also favors the concept of a neuronal allergy.

**Erythroblastemia of Fetus and Newborn Infant.**—Hubinont and Nameche report 1 case of hyperstimulation of the extramedullary erythropoiesis resulting in erythroblastemia with 25 per cent erythroblasts and 52 per cent nucleated red blood corpuscles in a premature newborn infant. Sudden death resulted from a meningeal hemorrhage after transfusion with Rh negative blood. Necropsy revealed volvulus of the small intestine. About 150 cc. of blood had extravasated in a pouch formed by the twisted loop of the bowel. This considerable amount of extravasated blood and the presence at birth of petechiae on the face and abdomen suggested a preexisting disturbance of coagulation. In a fetus delivered at term by cesarian section of a mother who for eight days presented continued hemorrhage due to placenta praevia, necropsy revealed the common signs of death resulting from sudden anoxemia, with considerable erythropoietic activity of the liver, which is abnormal in a fetus of this age. Neither in the newborn nor in the fetus was the secondary erythroblastosis due to hemolysis resulting from isoimmunization. In the case of the newborn infant the considerable internal hemorrhage represented an important diminution of the oxygen fixation power of the blood and a cause of anoxemia. Anoxemia should therefore be considered among the pathogenic factors of the erythropoietic reaction. In the case of the fetus the anoxemia played a primary part. The diminution of the placental hematosis by the separation and by the maternal anemia was the only responsible factor. In pathologic conditions of the newborn, erythroblastemia should be considered as a symptomatic factor of secondary importance.

## Anales Cátedra de Patol. y Clín. Tuberc., Buenos Aires

### 9:155-294 (Dec.) 1947. Partial Index

*Hepatic Lesions in Pulmonary Tuberculosis: Anatomic Study of 150 Cases. O. C. Croxatto and F. M. Palermo.—p. 201.

**Hepatic Lesions in Pulmonary Tuberculosis.**—Croxatto and Palermo studied the livers of 150 persons of either sex who died from pulmonary tuberculosis. They found congestion of the liver with or without necrosis of liver cells in 67 cases, moderate fatty changes of liver cells in 32 congested livers and in 18 noncongested livers, fibrosis of the liver in 11 cases, typical cirrhosis in 2 cases and miliary tuberculosis of the liver in 57 cases. Congestion of the liver in pulmonary tuberculosis is caused by dilation of the right heart chambers, whereas *necrosis of liver cells is caused by local anoxemia and nutri*tional deficiencies. Pronounced fatty changes of liver cells are rare in pulmonary tuberculosis. Moderate fatty changes of liver cells in either congested or noncongested livers are more frequent in active forms of pulmonary or extrapulmonary tuberculosis of predominantly caseous type than in the same forms of tuberculosis of predominantly fibrous type. Necrosis of liver cells of a congested liver in the presence of moderate fatty degeneration of the liver cells is rare. Pulmonary tuberculosis may lead to the development of fibrosis of the liver, but it plays no role in the development of hepatic cirrhosis. Miliary tuberculosis *of the liver is a frequent complication of pulmonary* tuberculosis. The vena porta plays no role as a route for dissemination of the infection.

## Archivos del Instituto de Cardiología de México

### 18:753-874 (Dec. 15) 1948. Partial Index

*"Chronic Cor Pulmonale:" Clinical and Roentgen Study of 150 Cases. M. Vaquero.—p. 763.

**"Chronic Cor Pulmonale."**—Vaquero reports a study on 150 patients between 50 and 70 years of age with chronic "cor pulmonale." Pulmonary sclerotic emphysema was present in all of the cases, and was complicated by chronic bronchitis in 69. The author states that it is possible to make an early diagnosis of chronic cor pulmonale before dilatation of the right ventricle and heart insufficiency are clinically established. Chronic cor pulmonale develops in three progressive stages manifested by *clinical symptoms, roentgenologic signs and electrocardiographic* changes. Early chronic pulmonary heart is manifested by dyspnea, cough and frequently cyanosis. The roentgen examination of the chest shows normal cardiovascular silhouette, intense positive cardiac response to the Müller and Valsalva tests for capacity volume of the heart, moderate enlargement of the branches of the pulmonary artery, pulmonary sclerotic emphysema and the causal pulmonary disease. The electrocardiogram shows a diphasic P wave in the V lead, tracings of the type $S_1$-$Q_3$, right axis deviation of QRS and P angles, normal negative values of the White and Bock index and possibly a negative T wave in the right precordial leads. In the advanced stage there are also cyanosis, moderate congestion of the jugular veins, moderate enlargement of the liver, increased venous tension and increased velocity of circulation. The roentgen changes of the heart show dilatation on the right, rotation of *the heart and enlargement of the middle* arch of the left profile of the heart. The electrocardiographic changes consist of auricular T wave in 2, 3 and VF leads, wider P wave, high in the 2, 3 and VF leads, tracings of the $S_1$, $S_2$ and $S_3$ type, right axis deviation of the QRS angle, small R wave in the precordial leads, tracings of either the R or RS type *in* $V_1$ *and in* $V_2$ leads, deep S wave up to $V_5$ and $V_6$, increased intrinsic deflection in $V_1$ and $V_2$ leads left deviation of the T angle, negative T wave in $V_1$ and $V_2$ leads, small QRS area and small gradient. Rapidly progressive cardiac insufficiency, edema and passive congestion of the pulmonary bases constitute the third and final stage of the disease. Several signs, including gallop rhythm, which are encountered during examination of the precordial region in patients in the third stage of the disease are also observable in the second stage.

## Brasil-Medico, Rio de Janeiro

### 62:361-376 (Oct. 16 and 30) 1948. Partial Index

*Rutin in Treatment of Pemphigus Foliaceus. J. Aleixo.—p. 361.

**Rutin in Treatment of Pemphigus Foliaceus.**—Aleixo administered rutin to 2 patients with pemphigus. The disease was of ten days' duration in 1 patient and of eight months' duration in the other. Rutin was given by mouth in daily doses of 80 mg. up to a total dose which varied between 0.08 Gm. in ten days and 0.16 Gm. in twenty days. The treatment resulted in disappearance of the bullae in the patient with a recent dermatosis. In the other patient, in whom the disease was more generalized and of longer duration, the older lesions regressed and new lesions did not appear.

## Cardiologia, Basel

### 14:1-128 (Nos. 1 & 2) 1949. Partial Index

Present Status of Surgical Treatment of Angina Pectoris. D. Danielopolu.—p. 1.

*Method of Treatment of Obliterating Endarteritis, with Trophic Lesions, in Extremities. Eutrophic Effect of Niacin Derivatives. B. Prusik.—p. 81.

Electrokymography. J. Schneider and F. G. Gillick.—p. 110.

**Nicotinic Acid (Niacin) Derivatives in Obliterating Endarteritis.**—The treatment described by Prusik consists of injections of compounds of nicotinic acid (niacin) exhibiting decided vasodilating effects. He employs a 3 per cent solution of triethanolamine of nicotinic acid for subcutaneous and intramuscular injections or a 1 per cent solution of the hydrochloride for intravenous injections. Good results were obtained with 20 or more injections in a total of 694 patients, who had disorders of the peripheral arteries, with or without gangrene. The injections greatly reduced the need for surgical treatment, particularly amputations of the lower extremities. Of 76 patients with gangrene resulting from Buerger's disease only 7 had to be operated on. The toxicity of the nicotinic acid preparations was slight.

## Deutsche medizinische Wochenschrift, Stuttgart

### 74:225-256 (Feb. 25) 1949. Partial Index

Behavior and Fate of Tissue Hormones During Pregnancy. G. Effkemann.—p. 225.

*Clinical Aspects of Hepatogenic Ulcer. D. Jahn.—p. 229.

Therapeutic Experiences During Blindness Produced by Methyl Alcohol. P. Siegert.—p. 232.

Estimation of Antihistaminic Action During Allergic Disorder. H. Friebel.—p. 243.

To What Extent Is It Possible to Immunize Tuberculous Children Against Diphtheria? G. Paschlau.—p. 245.

Question of Prevention of Striae of Pregnancy. H. Heusler-Edenhuizen.—p. 247.

### 74:257-288 (March 4) 1949. Partial Index

Report on Some Results of Anatomic Research in Germany During the Decade 1936 to 1946. P. Stöhr Jr.—p. 257.

Difficulty of Complete Comprehension of Damage Due to Undernourishment. H. Gillmann.—p. 259.

Temporal Variations of Physiologic Blood Values Depending on Environment. H. Günther.—p. 264.

*Variations of Leukocytes and Statistical Limits of Error. H. Eilers, H. Goldeck and G. Herrnring.—p. 267.

*"Polyneuritic" Diseases after Treatment with Arsphenamine. F. Laubenthal.—p. 270.

**Clinical Aspects of Hepatogenic Ulcer.**—Jahn reports 10 cases which illustrate a relationship between ulceration in the stomach or the duodenum and disease of the liver. Hepatic disease precedes the development of the gastroduodenal ulceration. The type of hepatic disorder varies. Of the patients whose cases are reported, some had hepatic disorders without jaundice with known or unknown causation; others had infectious hepatitis, incipient cirrhosis, caused either by inflammatory lesions of the hepatic parenchyma or by chronic infection of the bile passages, and still others had impairment of the hepatic metabolism as the result of a growing neoplasm or senile cachexia. The clinical course and the roentgenologic aspects of the hepatogenic ulcers do not differ from those of other types of ulcer. In necropsies of 2 of the aforementioned patients extensive hemorrhagic erosions were discovered in addition to the ulcer. The course of healing of the hepatogenic ulcer is like that of other ulcers, except that there is a greater tendency to relapses when enlargement of the liver continues. Treatment of the liver by administration of large quantities of carbohydrates is an important factor in the control of the ulcer. Treatment with artificial fever makes it possible to interrupt the inhibited protein metabolism. This is usually followed by a rapid increase in weight.

**Variations of Leukocytes.**—Eilers and co-workers counted the leukocytes and made differential counts from blood smears of 11 patients with leukocytosis of various intensity and causes every three hours for twenty-four hours. These eleven day and night counts did not reveal a definite and uniform rhythm like that which had been demonstrated concerning the formation, maturation and release of erythrocytes. Considerable differences were observed in the counts from the pipets as well as from the smears for which the same blood had been used, and that in spite of their keeping the technic as exact and as uniform as possible. To determine the medium deviation of the single variation classes from the medium value, and herewith the extent of possible errors, statistical computations were based on total leukocyte counts and differential counts from the blood obtained from 3 additional patients, 2 men aged 47 and 55, respectively, with myeloid leukemia and 1 man aged 57 with chronic pneumonia and exudative pleuritis. These control series revealed that a standard regular twenty-four hour rhythm which would have been presumed according to the up-to-date knowledge of rhythmic cell segmentation and processes of growth cannot be demonstrated by the common clinical methods of evaluation of the white blood cell picture. The considerable deviation of the variations of the leukocytes from the medium value should be considered in clinical diagnosis and prognosis to judge whether the leukocytosis is increasing or subsiding. Even with 20 cell counts the medium value may have a deviation width of 3,200 cells, or of plus or minus 24 per cent; this indicates that the leukocytosis may be considered as subsiding only when the number of leukocytes are below this limit.

**"Polyneuritic" Diseases after Treatment with Arsphenamine.**—Laubenthal considers two groups of lesions of the peripheral nervous system occurring in syphilitic patients who had been treated with arsphenamine. Patients belonging to the first group may present headache, rise of temperature, pain in the arms and legs associated occasionally with erythema, urticaria and swelling of joints, occurring within a few minutes, several hours or several days after the arsphenamine injection, frequently after the first injection. The acute aspect of the disease suggests an allergy or idiosyncrasy similar to the susceptibility to iodine. As a rule the condition has a favorable course. Five patients, 4 men and 1 woman between the ages of 25 and 50, are reported who belonged to the second group with neurologic disturbances occurring within three to twelve weeks after the last injection of arsphenamine. There was a gradual onset with paresthesias preferentially of the lower extremities and later of the upper extremities; severe motor pareses with distal localization developed. There was a rapidly progressing atrophy of muscles, disturbances of circulation in the extremities, disturbances of sensibility with distal localization and "burning pain" similar to causalgia. The neurologic aspect corresponded with that of chronic arsenic poisoning. All 5 patients presented icterus, which developed during the treatment with arsphenamine, while erythema, urticaria, swelling of the joints and fever were absent. The course of the neurologic disturbances was protracted, but there was a tendency to improvement. The duration of the disease was several months to two years. The pathogenic importance of the disturbance of the metabolism of the liver for these severe myatrophic disturbances after the treatment with arsphenamine is emphasized.

## Encéphale, Paris

### 38:1-48 (No. 1) 1949

Closing-In Phenomenon in Syndrome of Apraxia Due to Carbon Monoxide Poisoning. J. Ajuriaguerra, R. Zazzo and N. Granjon.—p. 1.

Diencephalic Attacks. C. I. Urechia.—p. 21.

*Phenomenon of Phantom Limb. B. Bornstein.—p. 32.

**Phantom Limb.**—Bornstein reports 22 cases of phantom limb in 19 men and 3 women between the ages of 13 and 72 years, in 16 of whom amputation was performed for trauma and in 6 for vascular disturbances. Six postwar cases of phantom limb in 3 men and 3 women of middle age are reported in whom amputation was performed for injuries caused by bursting shells. The author's observations confirm the opinion of others that 8 to 12 per cent of the amputees will have a sensation as of the amputated limb's still existing, and in the majority of them this sensation may start within a few days after the surgical intervention. The interpretation of the phantom limb is linked with the psychic existence of a corporeal image, which represents a final product not only of an arithmetical sum of the psychosomatic perceptions of the various sensorisensitive organs but also of the optic and kinesthetic perceptions. The existence of the phantom limb is more likely to occur in persons in whom optic perceptions predominate over the kinesthetic perceptions. The important psychic function which constitutes the existence of the corporeal scheme is localized in the nervous centers, probably in the parieto-occipital thalamic bundle. Electroshock treatment was instituted in 3 of the author's cases: in 1 patient, whose leg had been amputated and who had suffered severe phantom pain for seven years, the pain subsided after two treatments. In the second patient, whose forearm was amputated, the phantom pain disappeared after two treatments. The third amputee with a phantom limb was a morphine addict; when the drug was withheld an anxiety state developed for which shock treatment was instituted; the phantom pain disappeared after two treatments. In all 3 patients the phantom limb did not reappear during a follow-up period of one and a half years.

## Helvetica Chirurgica Acta, Basel

**16:**1-82 (Feb.) 1949

Etiology of Spinal Paralysis with Particular Consideration of Compression Noxae. R. H. von Muralt.—p. 3.
Symptomatology and Pathologic Anatomy of Fracture of Scaphoid Bone of Carpus, Pseudarthrosis and "Malacia." J. R. Rüttner.—p. 25.
Five Hundred and Sixty-Four Goiters and Five Hundred and Forty-Three Strumectomies in 1946. R. Fischer.—p. 36.
Two Cases of Strangulation Ileus as Sequela of Pneumococcic and Gonococcic Peritonitis Operated on, with Recovery. L. Rostas.—p. 53.
Misuse of Curare. W. Hügin.—p. 57.
*Millin's Operation for Hypertrophy of Prostate. H. R. Bloch.—p. 62.
*Question of Citrate Toxicity with Citrated Blood; Second Report. M. Allgöwer and W. Reif.—p. 75.

**Millin's Retropubic Prostatectomy.**—Bloch performed Millin's retropubic prostatectomy on 21 patients between the ages of 59 and 82, 13 of whom had incomplete retention of urine and 8 chronic retention of urine. The retropubic drain was left in place for three days and the urethral catheter with continuous suction drainage of the bladder for six days. The majority of the patients were discharged on the fourteenth postoperative day. Seventeen patients made an uneventful recovery, 1 patient died and 4 patients had postoperative complications, such as hemorrhage, urinary fistula and infection of the space of Retzius. The advantage of the retropubic approach from the point of view of the patient consists in the absence of postoperative shock, the almost painless convalescence and the brief hospital period. In the author's experience the incidence of operative and postoperative complications did not exceed that after Freyer's operation. Complications will occur still less frequently with more practice, when the space of Retzius will be known to the last corner, for in general not the method but the surgeon is responsible for such complications. The advantages of Millin's method from the point of view of the surgeon are the anatomic neatness of the technic and the easy and clean after-treatment.

**Citrate Toxicity with Citrated Blood.**—Experiments carried out by Allgöwer and Reif on rabbits and human beings revealed a reduced phagocytosis of the blood neutrophils when tested with Eberthella coli after citrated blood transfusions and injections of isotonic solutions of sodium citrate. The inhibitory effect on the phagocytosis was still manifest eight hours after the infusion, but could not be demonstrated after twenty-four hours. There seems to be a relationship between the inhibitory effect and the administered dose on one side and the body weight of the receptor on the other side. The part played by the general condition of the receptor is still being investigated. The extent of this inhibitory effect and its duration in the receptor of larger doses of citrate suggest that it may be of practical importance with regard to the employment of tribasic sodium citrate as a stabilizer in transfusions. In normal persons experimented on, 1 Gm. of tribasic sodium citrate per 25 Kg. (55 pounds) of body weight was tolerated without any considerable damage to the leukocytes. This should be taken into account in the employment of large amounts of citrated blood.

## Medicina, Buenos Aires

**8:**351-484 (Dec.) 1948. Partial Index

*Circulatory and Respiratory Functions in Constrictive Pericarditis. A. C. Taquini, J. R. E. Suárez and J. M. González Fernández.—p. 391.
Spontaneous Emphysema of Mediastinum. E. G. Fongi, O. Fustinoni and E. Marguery.—p. 431.

**Circulatory and Respiratory Functions in Constrictive Pericarditis.**—Taquini and his collaborators studied the circulatory and respiratory functions of 5 patients with constrictive pericarditis. The tests were repeated after surgical intervention in 3 patients. Venous pressure, cardiac output, oxygen consumption, pulmonary ventilation, alveolar air, vital capacity and residual air were determined under basal conditions. Before the operation the results showed an increase in the venous pressure, in the heart rate and in the difference of arteriovenous oxygen and a decrease in the systolic output and in the cardiac output. There was a reduction of the systolic output in 3 patients, due to limitation of diastolic ventricular filling. In the other 2 patients the analysis of the results led the authors to accept the existence of an inflow stasis and myocardial insufficiency. During rest, the increase in the heart rate partially or fully compensates the reduction in the systolic output, keeping the cardiac output within practically normal limits. Respiratory function showed a slight degree of pulmonary hyperventilation and low vital capacity. The tests repeated in 3 of the patients after surgical intervention showed an increase in systolic and cardiac output, with a decrease in the venous pressure, the heart rate and the difference of arteriovenous oxygen. There were no important changes in the respiratory function. Pulmonary ventilation showed no significant alteration in spite of the decided lowering of venous pressure.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

**93:**389-464 (Feb. 5) 1949. Partial Index

Coarctation of Aorta. A. J. R. E. van Schoonhoven van Beurden and P. D. M. J. Machtelinckx.—p. 398.
Increased Incidence of Gallstones After the War. C. G. Vervloet.—p. 410.
*Paratyphoid Transmitted by Smoked Herring. G. D. Hemmes.—p. 414.
*Case of Aspermia: Unusual Cause of Sterility in Man. L. I. Swaab.—p. 420.

**Paratyphoid Transmitted by Smoked Herring.**—Hemmes reports an outbreak of paratyphoid in which 123 cases occurred in seventeen different localities. Four of the cases had a fatal outcome. The outbreak could be traced to the eating of smoked herring, which was traced to a smoking establishment in which a worker had been ill but had continued to work. Examination of the feces and urine of this worker yielded Salmonella schottmülleri.

**Unusual Cause of Aspermia.**—Swaab stresses that aspermia is characterized by the total absence of ejaculate, whereas in azoospermia seminal fluid is produced but spermatozoa are absent or inactive. He presents the case of an otherwise healthy man who had aspermia. On ejaculation no sperm was produced, but after coitus the urine was found to contain spermatozoa. Ejaculation took place into the bladder as a result of a weakening of the vesical sphincter.

## Nordisk Medicine, Stockholm

**41:**295-342 (Feb. 18) 1949. Partial Index

*Effect of Curare on Spastic and Related Conditions. P. Thygesen and Erna Christensen.—p. 295.
*Treatment of Headache with Diluted Epinephrine Solutions. E. Fagerberg.—p. 299.
Streptomycin in Tuberculosis of Pharynx and Bronchi: Toxic Effect on Acoustic Nerve. K. Berg.—p. 302.
Acute and Chronic Barbiturate Poisoning. H. Malmros, I. Nilsby and W. Ohlsson.—p. 305.
*Complications in Intraosseous Therapy. T. Hiertonn.—p. 309.
Importance of Liver Biopsy in Differential Diagnosis Especially with Regard to Operation. M. Bjørneboe, P. Iversen and R. Keiding.—p. 313.
Surface-Active Invert Soaps Applied Intraperitoneally. S. S. Krook.—p. 318.

**Effect of Curare in Spastic and Related Conditions.**—Fifteen patients given treatment with curare were observed for ten to thirty weeks. Nearly all with spasticity in the lower extremities reported subjective improvement, and as a rule a change in the degree of spasticity was objectively noticeable. Thygesen and Christensen consider curare applicable especially in cases of spastic pain but also in attempts to improve the function of spastic extremities in cases with light paresis. The treatment should be prolonged. It is not a substitute for physical or orthopedic treatment but only a supplement to it, primarily to increase the availability of the musculature for physical treatment. The beginning dose in adults should be about 1.5 cc. purified chondrodendron tomentosum extract (intocostrin®) or 0.5 cc. tubocuran or tubarine. The optimal dose seems to be the dose that just causes transitory accommodation paresis and possibly light ptosis, given at three or four day intervals. In grave degrees of spasticity stronger doses are necessary and give only moderate relief.

**Treatment of Headache with Diluted Epinephrine Solutions.**—Fagerberg reports that of 18 patients with headache treated with intravenous injections of 1 cc. of epinephrine solution, 1:400,000 and in some instances 1:80,000 or 1:800,000, 11 showed decided improvement, in 2 the effect was doubtful and 5 were unchanged; 1 of the 2 patients with migraine was improved. The best results appeared in cases with more diffuse, indefinite disorder, sometimes a pressure and sometimes pronounced pain, localized in different parts of the head. The solutions were kept in sealed dark bottles under refrigeration. Tests by the fluorescent method for determination of epinephrine and biologic tests in isolated rabbit intestines showed that epinephrine solutions several weeks old were effective.

**Complications in Intraosseous Therapy.**—Hiertonn states that in sternal puncture and infusion there is danger of perforation of the sternum with injury to the heart or intrathoracic deposit of fluid. He cites 4 cases from the literature. In the first of 2 cases he reports, in a boy aged 3, operated on for congenital dislocation of the hip, two unsuccessful attempts at sternal puncture with a view to intraosseous therapy were followed by a new insertion in the manubrium; an aspiration test was performed and blood was infused. The boy died thirty minutes after the operation. Necropsy showed perforating channels through the sternum and the hemothorax; the sternum was only 6 mm. thick. In the second instance, in a boy aged 6, with osteomalacia, shock occurred after osteosynthesis of the hip (according to Küntscher). Treatment with sternal puncture and infusion of dextran and blood gave good results. Some days later there was a dull sound over the right lung and dyspnea was pronounced. After pleural puncture blood was aspirated. The child recovered. Perforation may have occurred during manipulation of the cannula during the blood transfusion, and the fragility of the bone may have contributed, as roentgen examination showed normal thickness of the sternum for the age.

## Presse Médicale, Paris

### 57:245-256 (March 19) 1949

Pneumoconiosis Caused by Mineral Dust. A. Policard.—p. 245.
*Complications of Jennerian Vaccination with Special Consideration of Postvaccinal Encephalitis; Attenuated Virulence and Bacterial Purification of Vaccine by Simultaneous and Temporary Action of Formaldehyde and Moderate Heat. G. Ramon, R. Richou and J. P. Thiéry.—p. 245.
Artificial Vaginal Cycle and Adrenal Secretion in Rats. G. Poumeau-Delille.—p. 247.

**Jennerian Vaccination.**—According to Ramon and coworkers there has occurred a recrudescence of postvaccinal encephalitis in France, Belgium, the United Kingdom and Holland in recent years. It is believed that the recrudescence of this as well as of other complications associated with the Jennerian vaccination is due to a considerable extent to an increased virulence of the Jennerian virus. The infectious power of the Jennerian virus may be increased by adventitious pathogenic microbes which have been observed frequently in the vaccinal pulp. Experiments carried out in horses, rabbits and in vitro demonstrated that by adding 0.02 to 0.05 of the commercial solution of formaldehyde to 100 cc. of the vaccinal pulp, the Jennerian virus can be transformed into an "anavirus," which causes the rapid development of antibodies in the serum of horses at the same titer as the fully virulent and not modified virus, destroying in vitro the infectious properties of the virus and protecting rabbits against the inoculation with the same virus. After treatment with formaldehyde the vaccinal liquid was subjected to temperatures varying from 15 to 20 C. for sixteen hours to six days. By this means all the adventitious microbes were eliminated from the vaccine. Certain samples of the vaccinal liquid proved to be practically sterile. By optional variation of the amount of formaldehyde added to the vaccinal liquid, of the temperature to which the latter may be exposed and of the duration of the effect of these two agents on the virus, a vaccine will be obtained, the employment of which will reduce or even eliminate the complications associated with Jennerian vaccination.

## Schweizerische medizinische Wochenschrift, Basel

### 79:213-236 (March 12) 1949. Partial Index

New Methods of Demonstration of Changes in Intervertebral Disk in Patients with Lumbago and Sciatica. F. K. Fischer.—p. 213.
Contribution to Study of Antithrombin. A. Ferlin and M. Noverraz.—p. 217.
Causation of Pulse. A. Horst.—p. 219.
Problem of Rectal Absorption of Calcium and Behavior of Blood-Calcium Level. H. Sauter.—p. 221.
Treatment of Asthmatic Diseases in Infants and Children with Dimethyl-Isopropyl Derivative of Azulene (Chamazulen). S. Blaszó.—p. 222.
Carcinoma and Effect of Stimulus. N. Melczer.—p. 225.
*Serologic Reaction as Aid to Diagnosis of Cancer: Statistical Results. R. Fontaine, M. Aron and P. Buck.—p. 227.

**Serologic Reaction Diagnostic of Cancer.**—Animal experiments previously reported by Aron showed that subcutaneous injections of filtrates of urine of patients with cancer caused characteristic changes in the adrenal cortex of rabbits but this reaction could not be produced in rabbits which had been given previously an injection of the blood of cancer patients. It appeared that the blood of patients with cancer may contain antibodies which in the presence of urinary "antigen" may cause flocculation. Fontaine and his co-workers demonstrated that the addition of a solution of urine extract of patients with various types of cancer to the blood serum which has been heated in the water bath to 55 C. for five days causes a flocculent precipitation much more pronounced than that caused in the blood serum which has not been heated. In the absence of cancer the flocculent precipitation in the heated serum is identical with that in the unheated serum. Aron's flocculation test was performed thirty-nine times in 34 patients with cancer; there were 34 positive reactions, 2 doubtful but rather positive reactions, 1 doubtful but rather negative reaction and 2 negative reactions. Thus in 85 per cent of the cases with cancer the reaction was positive. The test was performed in 66 patients who did not have cancer; there were 61 negative reactions, 2 doubtful reactions, 1 doubtful but rather positive reaction and 2 positive reactions. The reaction, therefore, was negative in 92 per cent of the cases without cancer. Aron's serologic reaction seems to give results which are superior to those obtained by any other method. The few erroneous reactions may have been due to the difficulty of certain readings or to insufficient observance of technical precautions.

## Wiener medizinische Wochenschrift, Vienna

### 99:107-138 (March 5) 1949. Partial Index

Indications for Treatment and Therapeutic Results in Tuberculosis in the Joints. P. Erlacher.—p. 107.
*Damaging Effect of Urethane on Central Nervous System. R. Klima and G. Wengraf.—p. 109.
Problem of Interruption or Destruction of Sympathetic Nerve in Patients with Angiospasm of Extremities. H. Lehmann.—p. 112.
Symptoms and Treatment of Parietal Attacks in Childhood. Temporary Absence of Vision and Color Sensations. O. Pötzl and W. Schober.—p. 115.

**Urethane and Central Nervous System.**—Klima and Wengraf treated 25 patients with various diseases of the blood with urethane during the period August 1947 to May 1948. Therapeutic results were particularly satisfactory in patients with chronic myeloid leukemia, but 8 patients presented disturbances suggesting damage to the central nervous system: they were depressed and ready to cry or listless and finally completely apathetic. In addition to fatigue and exhaustion there was vertigo, headache, anxiety and tremor. These symptoms became manifest after the administration of 27 Gm. to 80 Gm. of urethane in doses of 3 to 4 Gm. per day. Three of the patients, 1 woman aged 43 with myeloid leukemia, 1 woman aged 54 with subacute, subleukemic lymphoblastosis and 1 man aged 48 with aleukemic lymphatic leukemia, died. Necropsy revealed macroscopic focal changes in the central nervous system, and microscopic examination of these areas demonstrated glial increase of cells particularly in the neighborhood of ganglion cells. Urethane exerts a toxic effect on the ganglion cell apparatus. In the authors' cases the considerable damage done to the brain and the spinal cord was manifested by disseminated foci. Clinical experience seems to suggest that the damage is reversible to a certain extent. Results with irradiation therapy were not inferior to those obtained with urethane.

# Book Notices

**How Psychiatry Helps.** By Phillip Polatin, M.D., Associate Clinical Psychiatrist, New York State Psychiatric Institute, New York, and Ellen C. Philtine. With a foreword by Dr. Nolan D. C. Lewis. Cloth. Price, $3. Pp. 242. Harper & Brothers, 49 E. 33d St., New York 16, 1949.

This excellent book is written primarily for the public and should be especially helpful for patients and their families. The language is simple with a minimum of technical terminology. The major theme is an easily understandable description of the methods and principles underlying modern psychiatric therapies and the results which may be reasonably anticipated from their proper utilization. Although therapeutic optimism is expressed, a wholesome leavening of conservatism is apparent with recognition of the limitations of various types of treatments.

Only the first chapter deals with psychiatric philosophy and a delineation of the common types of psychiatric disturbances. Further discussions of etiologic and dynamic factors in symptom formation are occasionally used in case examples or woven into the description of various types of treatment, but an explanation of psychiatric therapeutic methods remains the primary objective. Practically all modern psychiatric therapies are discussed as fairly and extensively as a book of this length will permit. These include psychoanalysis, direct interview psychotherapy, psychobiologic distributive analysis and synthesis, narcotherapy and other chemical treatments, shock therapy and psychosurgery. A brief chapter covers the treatment of alcoholism, drug addiction, epilepsy and dementia paralytica. Also included are a short discussion of the principles of mental hygiene and a directory of agencies which supply information concerning psychiatric facilities.

The authors do not advocate a single doctrinal concept but recommend a broad and inclusive approach to the problems of psychiatric therapy. They are to be commended for their basic medical orientation and their acceptance of any type of treatment which benefits the patient and provides him with greater insight and better methods of meeting his personal difficulties. Not only is the book recommended for the layman but it would be profitable and easy reading for the busy practitioner.

**The Surgery of the Colon and Rectum.** By Sir Hugh Devine, M.S., F.R.C.S., F.R.A.C.S., Honorary Surgeon to Out-Patients Alfred Hospital, Melbourne. Cloth. Price, $12.50. Pp. 362, with 277 illustrations. Williams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2, 1948.

In the preface of this first edition of this brief book the authors state, ". . . the book is a general effort—diagnostic and operative—to improve the results of surgery of malignant disease of the colon and rectum." That portion of the book which pertains to this problem deals with the authors' experiences and is well done, although little which has not been written by others is included.

The book consists of 32 chapters on important topics. The first chapter is devoted to "Surgical Anatomy of the Colon and Rectum." It is instructive and comprehensive. Proctoscopic and sigmoidoscopic examination are included in this chapter. The description reveals a decided lack of knowledge of this important subject and is too brief to possess any value.

The second chapter, "Surgical Physiology of the Colon and Rectum," is fairly well done but is incomplete. The same opinion applies to chapter III, which deals with "General Diagnosis and Symptomatology of Diseases of the Colon" and chapters IV and VI, in which "The Diagnosis of Malignant Disease of the Proximal Colon" is discussed.

Chapters V, VII, VIII, IX, X, XII and XIII deal with "Innocent Diseases Involving both the Proximal and Distal Colon." The material is interesting and informative but all too brief.

Chronic ulcerative colitis is discussed in a few paragraphs of chapter XI, and the description of the sigmoidoscopic picture fits many types of inflammatory disease of the terminal portion of the colon. The authors state, ". . . surgical treatment of ulcerative colitis has not been satisfactory," and dismiss the complicated subject of medical treatment with this statement: "Medical treatment of chronic ulcerative colitis includes special forms of diet, the administration of vitamin C, the elimination of infection, the use of sensitized vaccines made from organisms cultured from the affected bowel and the use of special serum in certain cases." They then devote most of the remainder of chapter XI to surgical treatment, including a discussion of appendicostomy and a description of various types of enterostomy and colectomy. Chapter XVI, entitled "Operative Exposure of the Colon: Use of the Devine Operating Frame," is devoted to a description of the authors' retracting apparatus.

Figure 263 is purported to show "a fibroma prolapsed through the anus." The small tumor appears to the reviewer to be a hypertrophied papilla. Material on hemorrhoids, anal fistula and anal fissure is most incomplete and sketchy. The old-fashioned and discarded hard rubber tube with gauze wrapped around it is described, and surgical procedures are performed with the outmoded lithotomy position.

**Neurological Anatomy in Relation to Clinical Medicine.** By A. Brodal, Prosector of Anatomy, University of Oslo, Oslo. (Revision and translation of "Nevro-Anatomie," 1943.) Cloth. Price, $14.75. Pp. 496, with 94 illustrations. Oxford University Press, 114 5th Ave., New York 11; Amen House, Warwick Sq., London, E.C. 4; Johan Grundt Tanum Forlag, Oslo, 1948.

This is a "practical" neuroanatomy in the sense that its purpose is to relate neuroanatomy to clinical medicine rather than to serve as a descriptive text of an anatomic field. This approach also requires the introduction of as much physiologic as strictly anatomic material. Approaches of this sort pose a difficult task for an author. Physiology is a rapidly changing field and it is not surprising that Brodal's text, the original edition of which was prepared during the war years and in an area deprived of much of the new literature, should already be somewhat outdated. In this English edition the author has been able to introduce a certain amount of recent material, but an underlying earlier structure is still apparent. The author's choice of physiologic material was so sound fundamentally that as the text now stands additions rather than basic changes are presently required. Judgment is in fact the salient characteristic of Brodal's book. It is sound and the material is presented in a fresh and orderly manner with great clarity of thought and several rather penetrating presentations.

One is surprised to find that the cerebellum, a structure on which the author has done most of his research, in conjunction with his mentor, Jansen, is given rather cursory treatment, while some other subjects, which Brodal has obviously had to work up for the occasion, are handled more completely but, of course, in a much stiffer fashion.

The book is recommended for the clinician who is looking for something more reliable and well rounded than Fulton's Neurophysiology, more modern than Brock's Basis of Clinical Neurology and more comprehensive than Merritt, Mettler and Putnam's Fundamentals of Clinical Neurology. For a work which is almost devoid of illustrations the price—$14.75—seems fantastic. If the book does not have a wide sale in the United States the publisher and not the author should be blamed.

**The American Academy of Orthopaedic Surgeons Presents Lectures on Regional Orthopaedic Surgery and Fundamental Orthopaedic Problems. Number II. Selected from the Instructional Courses of the Fourteenth Annual Assembly, Chicago, January 25-30, 1947.** Editor, James E. M. Thomson, M.D. Associate Editor, Walter P. Blount, M.D., Chairman of the Instructional Section. Cloth. Price, $7.50. Pp. 255, with illustrations. J. W. Edwards, 300 John St., Ann Arbor, Mich., 1948.

This book, the second volume of Regional Orthopedic Surgery and Fundamental Orthopedic Problems, comprises some of the lectures delivered at the 1947 Annual Instructional Course sponsored by the American Academy of Orthopedic Surgeons. The opening lecture, dealing with the diagnosis, treatment and prognosis of primary malignant tumors of bone, is written in a clear and concise manner. A short article reiterating some of the most salient points in reconstruction of the hand is of special interest. Among the papers dealing with lesions in the cervical region, the controversial scalenus anticus syndrome is discussed from an anatomic point of view. Opinion has since crystallized, and the prolapsed cervical disk and costoclavicular syndrome have their staunch adherents. This section is followed by one dealing with low back pain—some of the surgical concepts will not find favor in every quarter. Three excellent lectures on congenital dislocation of the hip, by orthopedic surgeons eminent in this field, can be commended to all. The differential diagnosis in the treatment of some common lesions of the shoulder should be read with the lectures on this subject in the previous volume. They place this difficult problem on a simple basis, easy to understand and follow out in practice. At the historical dinner of the American Academy of Orthopedic Surgeons four interesting and entertaining papers were given dealing with the early years of orthopedic surgery in this country.

Each year the lectures from the instructional courses appear to be greatly improved over their predecessors. Much credit is due the American Academy of Orthopedic Surgeons for sponsoring these courses and for making them available.

**Tuberculosis in Childhood.** By Dorothy Stopford Price, M.D. With a chapter on Tuberculosis Orthopædic Lesions and Other Contributions by Henry F. MacAuley, M.Ch., F.R.C.S.I., Orthopædic Surgeon, Mater Misericordiæ Hospital, Dublin. Second edition. Cloth. Price, $7. Pp. 219, with 87 illustrations. Williams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2; John Wright & Sons, Ltd., 42-44, Triangle West, Bristol 8, England, 1948.

This second edition contains 219 pages. Its thirteen chapters touch on many phases of tuberculosis in childhood. In diagnosis, the author emphasizes the importance of the tuberculin test and states that it is an essential diagnostic aid in the detection of all forms of tuberculosis among children. It is the only possible method of detecting symptomless primary tuberculosis. She points out that in the adolescent and young adult the tuberculin test is becoming more valuable, as primary infection is more often postponed to these ages. Repeated tuberculin testing of nonreactors is regarded as necessary. The statement that primary tuberculous infection occurs at some time in the life history of every person does not apply to the United States, where in large areas not more than 5 to 8 per cent react to tuberculin at the age of 18 years.

The chapter on roentgen rays contains forty-three illustrations of pathologic specimens and roentgen reproductions. It is emphasized that from the roentgen ray shadow alone the etiology of the lesion cannot be determined. Price finds that in Dublin 50 per cent at least of the children who react to tuberculin have roentgenologic lesions demonstrable by the shadows they cast. This is a much higher figure than has been found in the United States, where many of the calcific deposits are the result of fungus infections and other nontuberculous conditions.

An excellent chapter is devoted to primary tuberculosis of the lungs, tuberculosis of the mediastinal glands and pleurisy. The acute reinfection forms of tuberculosis, such as miliary disease, meningitis and pneumonia, among children are discussed at some length.

Attention is called to the development of primary tuberculosis among adolescent persons. In the area where Dr. Price works, 50 per cent of the children are infected at the age of 14 years. She states that all the others must become infected; therefore half of all primary lesions develop in adults. The highest death incidence occurs in the 20 to 25 year age period. In several states in this country, the height of mortality is not reached until after the age of 60 years. As in this country, Dr. Price has found that the immediate prognosis in primary tuberculosis is good, but the ultimate prognosis in any given case may be unfavorable. Dr. Price believes that total eradication of tuberculosis may be achieved in years to come by the compulsory control of all persons with positive sputum and by the extermination of all tuberculous cattle. Chapters 12 and 13 are devoted to extrathoracic tuberculosis in children.

This is a good book. Several points of view which differ considerably from those held by tuberculosis workers in the United States are due largely to the much greater prevalence of tuberculosis in Dr. Price's field of activity.

**Pediatric Nursing.** By Gladys S. Benz, R.N., B.S., M.A., Associate Director, Union University School of Nursing, Albany, N. Y. Cloth. Price, $4. Pp. 638, with 119 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1948.

As knowledge accumulates regarding more effective therapeutic measures for the diseases of children, technics throughout the field of child care must necessarily undergo changes. So it is in the field of pediatric nursing.

This book covers the entire field of pediatric nursing, is up to date and thorough. Such new concepts in the care of children as self-demand feeding are explained in detail.

Chapters dealing with the history of the pediatric hospital, statistics on infant mortality and activity and safety programs as they affect child care, in addition to the usual chapters found in textbooks concerned with pediatric nursing, make this book a well rounded text.

**Atlas of Neuropathology.** By Wm. Blackwood, M.B., F.R.C.S.E., Assistant Pathologist, the National Hospital, Queen Square, London, T. C. Dodds, F.I.M.L.T., F.I.B.P., F.R.P.S., Laboratory Supervisor, Department of Pathology, University of Edinburgh, and J. C. Sommerville, A.I.M.L.T. Foreword by Professor A. Murray Drennan, M.D., F.R.C.P.E., F.R.S.E., Professor of Pathology, University of Edinburgh. Cloth. Price, $9. Pp. 199, with 262 illustrations. The Williams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2, 1949.

This is an introductory text designed for the beginner in neuropathology. Its purpose is to provide illustrative material to students and others who do not have an adequate variety of specimens readily available. The majority of the illustrations are of gross specimens, although there is a fair number of photomicrographs. The text is limited to a few brief statements regarding each condition dealt with and the figures chosen to illustrate it. The disorders described and illustrated are limited to the common neurologic conditions. Rare diseases, minor variations and controversial subjects are not presented.

In general the illustrations are well chosen and well reproduced. Only a few are open to criticism. In one or two instances the photographs selected depict an atypical example of the condition under discussion. In a book designed for the novice and one so limited in textual matter this is unfortunate. The most outstanding examples of this are figure 127, which shows the spinal cord in a case of subacute combined degeneration (posterolateral sclerosis) with severe degeneration in the posterior columns and almost none in the lateral ones; figure 211, which the authors recognize to be an atypical example of an oligodendroglioma, and figure 205, which is probably an example of a pineoblastoma rather than a medulloblastoma or, if it is an example of the latter, is quite an unusual one. Figure 12 does not show a good impregnation of the oligodendroglia; figure 34 is not clear; figure 70 is not good; figure 108 does not illustrate Schilder's disease as well as a good Weigert-Pal stain of the cerebral cortex and white matter would have done, and figure 220 is at too low a magnification. The statement on page 26 that massive cerebral hemorrhage is always associated with arterial hypertension is not correct and not in accord with the discussion on the following pages of the intracerebral hemorrhage which is often associated with aneurysms.

There is a list of a few well selected references and an adequate index.

**A Textbook of Gynæcological Surgery.** By Victor Bonney, M.S., M.D., B.Sc., *Consulting Gynæcological and Obstetric Surgeon to the Middlesex* Hospital, London. Fifth edition. Cloth. Price, $15. Pp. 928, with 590 original drawings by the author and 17 color plates. Paul B. Hoeber, Inc., 49 E. 33rd St., New York 16, 1948.

This is a good book on gynecologic surgery written by master surgeons who set forth concisely their opinions on subjects pertaining to gynecologic surgery. The illustrations are mostly simple pen and ink drawings which lend themselves well to elucidating the steps of the various operations. The simplicity of the technic emphasizes the points that they are trying to bring out. Anatomically they are not correct in many respects, which is to be expected, since the artistic ability of great surgeons must necessarily be limited.

One can disagree with their choice of operations in some instances, such as the Baldwin operation for artificial vagina, which has largely been given up as a standard procedure in this country. One could also question the abdominal approach for splitting the cervix to relieve dysmenorrhea. This can be much more simply done from below, and perhaps the results obtained would not justify the procedure.

In discussing removal of uterine polyps the important point of curetting the base of attachment of the polyp was ignored and not mentioned even in the after-treatment in such cases. They make a much bigger job of morcellation of a submucous fibroid than necessary. Wedge excisions repeated after putting the cut surfaces together with tenacula and repeating the excision are all that is necessary.

The discussion of vaginal hysterectomy is not convincing. It is much easier to open the cul-de-sac of Douglas posteriorly to the cervix primarily and to detach the uterosacral ligaments, allowing the cervix to descend before exposing and opening the uterovesical pouch. This having been opened with a scissors there is no need for the step of tearing it open further with the fingers as shown in figure 148. Figure 149 shows the fornix being incised, not the cervix, as stated in the inscription. The uterovesical fold should be opened in the midline and not as shown in figure 150.

Figure 153 shows the lower portion of the broad ligament being palpated. There is nothing of importance to palpate except the uterine artery the location of which should be known and which should be exposed by dissection before clamping and tying. There is no reason for tying the broad ligament as shown in figure 157. One tie for tube, round ligament and anastomosing branch of the ovarian artery, one on the uterine artery and one on the cervical branch of the uterine artery are all that are useful.

The description of the LeFort's operation is not as clear as one would desire.

The discussion of cesarean section operation is obviously from the point of view of a surgeon and not of an obstetrician. Indications such as elderly primipara, ovarian cysts, and fibroids threatening to obstruct the birth canal are not considered indications for cesarean section unless there are other factors such as incarceration of the cyst or fibroid or elderly primiparas who have had a trial of labor and failed or who have hypertension or some other medical complication. The authors advocate cesarean section in all cases of decompensated heart. In many of these cases the decompensation can be corrected by proper medical management and the delivery can then be from below.

Cesarean section for locked twins or for breech with extended legs is not justified. Most oblique and brow presentations will deliver spontaneously.

One should not administer ergot before opening the abdomen in cesarean section. In a patient unusually sensitive to this drug, tetanic traction which could be dangerous to the fetus may occur.

There is no evidence to support the view that low cervical cesarean section is more difficult than the classic type when performed by competent surgeons thoroughly familiar with both technics.

The discussions of total, subtotal and Wertheim's hysterectomies are very good. More emphasis is placed on myomectomy than is usually given in American textbooks; this is a form of conservatism to be commended in many cases. However, the coincidence of cancer and fibroids must be kept in mind and this conservatism should not be carried too far when extensive myomatous degeneration is present.

Urinary incontinence operations are well handled, as are ovarian tumors and ovarian cysts.

The addition of the chapters on operations on the intestinal tract, including abdominovaginal excision of the rectum are valuable, although not ordinarily included in textbooks on gynecology. The authors' discussion of preoperative and postoperative management is very good.

In general, this is to be considered an excellent work for men doing gynecologic surgery. Its lack of consideration of medical-gynecologic problems would make it undesirable as a textbook for undergraduate teaching in gynecology.

**Juvenile Rheumatism: A Clinical Survey.** By G. E. M. Scott, M.B., L.R.C.P., L.R.F.P.S., Honorary Medical Clinical Assistant, Royal Melbourne Hospital, Melbourne, Australia. Cloth. Price, 25s. Pp. 163. W. Ramsay (Surgical) Pty., Ltd., 340 Swanston St., Melbourne, C. 1, 1948.

The object of this monograph, as stated in the preface, is to present a condensed review of the author's experience in juvenile rheumatism. Dr. Scott has given much thought and trouble to make this monograph a survey of the most important and recent clinical and laboratory investigations, rather than a medium to express his own personal opinions. Although the author's views are evident to the reader they are not emphasized, and there are few critical remarks.

This book deals entirely with problems of rheumatic fever; juvenile rheumatoid arthritis and other less common forms of childhood rheumatic disease receive no attention. The opening and closing chapters are devoted to the social aspects of rheumatic fever: the comparative incidence in Australia, England and the United States, the mortality rate and the social care of children with rheumatic fever, rheumatic heart disease and chorea. The other chapters deal with the modern trend of thought regarding the etiology, pathology and epidemiology, outline the recent investigational studies and offer an excellent bibliography.

Pictorial illustrations are absent from this monograph, but there are many illustrative case protocols. The cardiologists, pediatricians and obstetricians are given a good many examples of insidious and unusual cases in which the diagnosis is seldom made or suggested when the heart is already damaged. The symptom complex is not sufficiently described to serve the purposes of the undergraduate student and the general practitioner; the chapters dealing with therapy and prophylaxis serve them better.

This monograph will aid those who seek to be up to date particularly in regard to the considerations of etiology, pathogenesis and prophylaxis of rheumatic fever.

**The Uses of Penicillin and Streptomycin.** By Chester Scott Keefer, M.D., Wade Professor of Medicine, Boston University School of Medicine, Boston, Mass. Porter Lectures, Seriec 15. Cloth. Price, $2. Pp. 72. University of Kansas Press, Journalism Building, Lawrence, Kan., 1949.

This small volume contains the text of the three Porter Lectures delivered by Dr. Keefer under the auspices of the University of Kansas School of Medicine. The first lecture presents a detailed discussion of the practical aspects of the use of penicillin and its various dosage forms in clinical practice. The second lecture presents a similar discussion for streptomycin. The third, and much shorter lecture, is historical and traces the development of the concept of antibiosis from the observations of Wollstein in 1876 on anthrax to the discovery of streptomycin. These lectures present a readable and useful summary of the practical and rational use of penicillin and streptomycin in everyday clinical practice.

**Diseases of the Skin.** By Oliver S. Ormsby, M.D., Attending Dermatologist to the Presbyterian Hospital of Chicago, Chicago, and Hamilton Montgomery, M.D., M.S., Associate Professor of Dermatology and Syphilology, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester, Minnesota. Seventh edition. Fabrikoid. Price, $18. Pp. 1462, with 782 illustrations. Lea & Febiger, 600 S. Washington Square, Philadelphia 6, 1948.

The new revision of this standard work has eliminated obsolete material and permitted the addition of new information on tropical diseases and the treatment of syphilis and the application of antibiotics in dermatologic therapy. An attempt has been made to utilize the standard nomenclature of diseases but not completely. The history of this textbook of diseases of the skin is a record of continuing leadership from the first Montgomery and Hyde edition to the present volume, which carries again the Montgomery name.

**Handbook of Diseases of the Skin.** By Richard L. Sutton, M.D., and Richard L. Sutton, Jr., M.D., Associate Professor of Dermatology and Syphilology, University of Kansas Medical School, Kansas City. Cloth. Price, $12.50. Pp. 749, with 1057 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1949.

Here is a new textbook, rather than a revision. The book is based on what the authors have learned by a critical analysis of their own extensive experience in writing and their equally extensive clinical experience, both of which furnish a solid basis for a well balanced and practical treatise.

This edition is characterized by the concise and forceful manner of the junior author. Everything in dermatology is covered, and extensive use is made of small type for less common or less important conditions and for elaborations on or digressions from the main subject matter of individual chapters. The diseases are grouped for discussion on a basis of etiology as far as that is possible, and a special effort appears to have been made throughout the text to attain conciseness and yet thoroughness. The junior author presents tersely his own interpretations of disease processes and his own preferences for treatment, with which not all dermatologists agree, but he resorts freely to current dermatologic and nondermatologic literature. Numerous references are embodied in the text directly in conjunction with the statements made, so that the reader may readily amplify the information furnished by reference to original articles.

This may make the text less easy for the student to read but increases its interest and value for the general practitioner and particularly for the dermatologist. It is recommended to all three. The 719 pages of text contain over a thousand small but excellently reproduced clinical photographs and microphotographs that add materially to the descriptive text. The paper, printing and binding are good and the small as well as the large type is easy to read.

This handbook is endorsed without reservations.

**Die Tuberkulosebekämpfung Grundlagen und Wege zu einer einheitlichen und erfolgreichen Durchführung.** Von Obermedizinalrat Dr. Rolf Griesbach. Second edition. Boards. Price, 27 marks. Pp. 460, with 38 illustrations. Georg Thieme, Diemershaldenstrasse 47, Stuttgart O, 1948.

This book of 460 pages contains a large store of information concerning the tuberculosis control program in Germany. The graphs of mortality rates are especially enlightening. In 1890 the rates were 24 per 10,000 population. There was a gradual and almost constant decrease until 1914, when the rate was only about 12 per 10,000. By 1921 the rate was again down to 12, and it decreased regularly to 7 per 10,000 in 1934. Thus, except for the period during and shortly after World War I, there was a definite and constant decrease in mortality between 1890 and 1934. The effects of war did not continue as long as might have been expected. Special graphs on mortality by sexes show a higher rate among men at all periods of life except from 5 to 30 years. The highest mortality rate was reached (1934) by men between the ages of 60 and 70 years. This was over 12 per 10,000; while among women of the same age it was slightly more than 8 per 10,000. The various fundamental procedures employed in the control of tuberculosis are described in considerable detail, including the diagnostic armamentarium, with special emphasis on roentgen ray, inspection of the chest, and hospital and sanatorium facilities. All forms of tuberculosis are discussed, together with therapeutic procedures and methods of prevention.

A high mortality was reached again during World War II. However, with fundamental work in progress there is good reason to expect that tuberculosis will soon reach its prewar level and continue to decrease as it did after World War I.

**Vitamin A Requirement of Human Adults: An Experimental Study of Vitamin A Deprivation in Man. A Report of the Vitamin A Sub-Committee of the Accessory Food Factors Committee.** Compiled by E. M. Hume and H. A. Krebs. Medical Research Council Special Report Series No. 264. Paper. Price, 3s. Pp. 145, with 17 illustrations. His Majesty's Stationery Office, York House, Kingsway, London, W.C. 2, 1949.

Prompted by the critical food needs and the accompanying problems of rationing during the war, the British Medical Research Council in 1942 undertook to determine the vitamin A and carotene requirements of human adults.

Twenty-three healthy young adults (20 men and 3 women) between the ages of 19 and 34 years received a diet deficient in vitamin A (containing less than 70 international units of beta carotene daily) for six and one-half to twenty-five months. Sixteen subjects received the diet unsupplemented until they showed unmistakable signs of deficiency or left the experiment for reasons unrelated to the study. They were then given graded doses of vitamin A or carotene. Seven subjects served as positive controls, 2 of them receiving 2,500 international units of vitamin A daily as a natural concentrate and 5 receiving about 5,000 international units daily of carotene as beta carotene in oil or margarine or as carrots, spinach or cabbage.

The length of time required for signs of deficiency to appear was much longer and the number of subjects showing marked deficiency was much smaller than expected; no changes occurred until after eight months on the deficient diet, and 1 subject showed no signs of depletion even after twenty-four and one-half months on the deficient diet. A variety of tests, including clinical examination, skin biopsies, slit lamp examination of eyes and psychologic tests, were made regularly, but the only ones which gave positive results and proved useful as criteria of deficiency were the plasma level of vitamin A and the capacity for dark adaptation. A direct correlation between these two measurements was observed. Subjects with pronounced deterioration of dark adaptation had plasma vitamin A values below 40 international units per hundred cubic centimeters, whereas deprived subjects whose dark adaptation remained normal had plasma levels of vitamin A above 40 international units per hundred cubic centimeters.

On the basis of studies of graded doses of vitamin A in the 3 subjects who were adequately depleted, the minimum protective dose was found to be 1,300 international units daily, with 2,500 international units daily recommended as the amount required to cover individual variations.

The requirement of carotene is based on "maximum effective dose" (intake minus fecal excretion) rather than on intake and varies with the source of carotene. The minimum protective dose was 1,500 international units daily, with 3,000 international units daily necessary to cover individual variations, assuming carotene is 100 per cent available. The single value suggested for daily intake of carotene from natural foods is 7,500 international units, or three times the daily requirement for vitamin A.

The study was comprehensive and well planned. Many of the determinations were carried out by several different laboratories. Valuable details of chemical methods and comparisons of methods for measuring dark adaptation are included. The report is a valuable addition to the literature on vitamin A requirement and on the role of vitamin A in human metabolic and nutritional economy.

**Histopathology of Irradiation from External and Internal Sources.** Edited by William Bloom, M.D., Professor of Anatomy, Department of Anatomy and Institute of Radiobiology and Biophysics, University of Chicago, Chicago. National Nuclear Energy Series, Manhattan Project Technical Section, Division IV, Plutonium Project Record, Volume 22 I. Cloth. Price, $8. Pp. 808, with illustrations. McGraw-Hill Book Company, Inc., 330 W. 42d St., New York 18, 1948.

This volume deals with the histologic effects of various types of irradiation on several different animal species. The lesions of total body irradiation, obtained from externally applied roentgen, gamma and beta rays, also fast and slow neutrons, are compared with those produced by a variety of alpha, beta and gamma ray emitters given internally.

Each major organ or tissue forms the subject of a separate chapter. There are a large number of contributors and each concentrated on a particular organ. The plan of the book is to give in detail the effects on a given organ of one type of total body irradiation from an external or internal source and with this as a base line to compare the changes produced by external and internal radiations from other sources.

The authors have assembled a large mass of material on the histologic lesions of irradiation. The data is presented well and is illustrated by many good photomicrographs.

Items of merit include use of a variety of animals, numerous radioactive elements and varied, accurately measured dosages. There are several limitations of omission. In places the data, especially those pertaining to recovery, are too brief or incomplete. Long term effects of radiation are omitted. References to the literature are relatively scant. As the authors state, the work throws no light on such important problems as cause of radiation death and variation in tissue susceptibility to radiation.

Nevertheless, the book is a commendable effort. It should prove a valuable reference source, particularly to pathologists and histologists.

**Anson Jones: The Last President of Texas.** By Herbert Gambrell. Cloth. Price, $5. Pp. 462, with one portrait. Doubleday & Co., Inc., 14 W. 49th St., New York 20, 1948.

History is replete with the names of physicians who led double lives in the sense that the practice of medicine was only one of two major interests, the other being art, literature, politics, statesmanship, exploration or similar activities. Dr. Anson Jones was the last president of Texas before it joined the United States. He was an amazing, dramatic and romantic figure, a leader with all of the attributes that leaders require. He could talk, he could write and he had courage. Occasionally he may have been misguided, but his motivations were sincere. Professor Gambrell has humor, and his portrayal of Anson Jones is highlighted by the warmth of his interest in his hero.

# Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

## EATING HABITS OF CHILDREN

**To the Editor:—A 6 month old female baby refuses milk and, in fact, refuses to eat anything—so the mother says! Yet, this child weighs 16 pounds (7,257 Gm.) and weighed 5½ pounds (2,495 Gm.) at birth—one month prematurely. The child received plasma for diarrhea as a newborn infant. The liver is not abnormally enlarged nor is there icterus (no evidence of homologous serum hepatitis) or anemia. The mother is definitely an anxious and emotional person. What practical measures can I now take?**

**M.D., Massachusetts.**

Answer.—This premature infant weighed 5½ pounds at birth and weighs 16 pounds at 6 months of age. The average 6 month female infant, 26 inches (66 cm.) in length, will weigh 15.5 pounds (7,031 Gm.).

The mother of this baby claims that her daughter refuses milk and refuses to eat. However, the mother is described as being anxious and emotional. The fact that the infant's weight is adequate would belie the mother's claim that the infant neither eats nor drinks its milk.

The increment of growth in the first few months of life is much steeper than in the latter part of the first year, and most infants eat avidly in the first few months. As the rate of growth slows, the appetite gradually drops off and the anxious or emotional type of mother is likely to force her infant beyond its appetite and actual food requirements. The mother at once is convinced that her infant not only is refusing all milk but all food offered. Hence many mothers honestly make this claim and feel that their baby is starving; it is usually most difficult to convince them that the baby is of average, or above average, nutrition.

The first practical measure is to convince the mother that the infant is in good nutrition. Second, convince her that the amount of food the infant needs will depend on how fast the baby has grown. Third, convince such a mother that the amount of food the baby actually wants will probably be the amount that the infant needs, rather than the amount which she has decided the baby should have.

The following items from "Children Like To Eat," published by the Children's Bureau, Washington, D. C., are practical points which will aid an emotional mother in feeding her baby: 1. Children will eat if you "let" them. 2. Do not force food. 3. Let the child's needs determine how much he wants. 4. Help him to help himself. 5. Watch when he is ready to take the next step. 6. Have pleasant surroundings. 7. Be casual, friendly, patient. 8. Don't scold, nag, fuss: 9. Respect your child's likes and dislikes.

## EXPOSURE TO CUTTING OILS

**To the Editor:—Please furnish information concerning prolonged contact and inhalation of "solvent oil," which, as I understand it, is a commercial "emulsion" oil of petroleum derivative used in connection with grinding wheels for cooling the metal and carrying away results of grinding. What are the outstanding possibilities from prolonged use? Are there other injurious materials used in making these products?**

**R. A. Blossom, M.D., Long Beach, Calif.**

Answer.—Scores of different oily cutting compounds are regarded as "solvent oils." Usually the quantity of oil entering the emulsion is so low as to be negligible except as a source of skin diseases. Cutting oils are common causes of dermatitis, while the more concentrated heavy oils may induce "oil furunculosis." Lighter fractions of petroleum oils (e. g., naphtha, kerosene and mineral spirits) are ready causes of dermatitis. Many cutting oils of the water-soluble type are further treated with sulfur or chlorine. As a result, respiratory irritation may arise. In some European countries, the quality of oil available long has been associated with cancerogenic properties, leading notably to skin cancer. Pulmonary carcinoma from the inhalation of oil mists has been suspected but possibly never demonstrated. In the United States oil cancers of any type are little known to industry. Inhalation of high concentrations of the vapors of such petroleum fractions as gasoline or naphtha may promptly be followed by an acute intoxication, "naphtha jags," closely resembling acute alcoholism. Prolonged exposure occasionally leads to chronic naphtha poisoning, a state resembling multiple sclerosis.

## HYALURONIDASE IN RHEUMATIC FEVER

**To the Editor:—Please give a brief account of the significance of hyaluronic acid and hyaluronidase in rheumatic fever.**

**E. T. Drake, M.D., Williamson, W. Va.**

[This inquiry was referred to two authorities, whose respective replies follow.—*Editor.*]

Answer.—Hyaluronic acid occurs in the interstitial spaces in animal tissues. It is a mucopolysaccharide acid and seems to hold water, holds the cells together in a jelly-like matrix and serves as a lubricant and shock absorber. Hyaluronidase is an enzyme which depolymerizes and disaggregates hyaluronic acid.

Hyaluronic acid may occur in groups A and C hemolytic streptococci; hyaluronidase also occurs in strains of hemolytic streptococci of groups A and C. The concentrations of these substances, however, do not appear to bear relationship with the ability to produce rheumatic fever by certain strains of the streptococci.

Studies in the viscera and in striated muscle fascia and tendons reveal that hyaluronate and chondroitin sulfate are present in concentrations roughly equal. It has been demonstrated that hyaluronic acid in common with other asymmetric molecules may increase the sedimentation rate in vitro, or after intravenous injections. Purified testicular hyaluronidase decreases in vitro the sedimentation rate of patients, especially in rheumatic fever.

Hyaluronidase increases the spreading of india ink injected into rabbits. In human subjects, with active or inactive rheumatic fever, injection of the enzyme with the dye T-1824 is said to cause unusual reactions with large diffusion of the dye and local edema. Salicylates inhibited the spreading reaction in these cases. The explanation of this effect, as well as the beneficial action of salicylate on some rheumatic manifestations, may be found in an inhibition of hyaluronic production of mesenchymal cells.

The practical importance of hyaluronic acid and hyaluronidase in rheumatic fever must be left to the accumulation of further experimental studies. It is conceivable that the precipitating agent, the rheumatic fever-producing strains of beta hemolytic streptococci, may invade tissues with the aid of their own production of hyaluronidase and hyaluronic acid.

Answer.—Hyaluronic acid is a mucopolysaccharide substance found in all mesenchymal tissue (present in the interstitial substance of connective tissue). In mammals, the highest concentrations are found in synovial fluid and skin, and the next highest in the vitreous humor. The exact source of hyaluronic acid remains unknown, but it has been suggested that young fibroblasts in undifferentiated connective tissue may produce it in large quantity. Hyaluronic acid is thought to be influential in the protection offered by the skin against bacterial invasion. The only micro-organisms known to produce hyaluronic acid are groups A and C of hemolytic types of streptococci (in the mucoid phase).

Hyaluronidase is an enzyme which acts (hydrolysis) specifically on hyaluronic acid. The enzyme is rather ubiquitous, being encountered wherever there is destruction of normal tissue and being present in many pathogenic bacteria, snake venoms and spermatozoa. Hyaluronidase has the ability to initiate and spread infections, although this is a feature of other enzymes as well. When injected into connective tissue, hyaluronidase increases capillary permeability, whereas the intravenous injection of hyaluronidase has no such effect.

A possible relationship between hyaluronic acid, hyaluronidase and rheumatic diseases is suggested by: (1) the proposal of Klinge that rheumatic diseases are primarily diseases of the cement substance; (2) the fact that sulfonamide compounds, admittedly inactive in rheumatic diseases, have no influence on hyaluronidase (Guerra); (3) the relatively low quantities (one sixth to half of normal) of plasma enzymes with anti-invasive reactivity in patients with rheumatic fever as compared with healthy persons (Haas), and (4) the inhibitory action of small amounts of sodium salicylate on the spreading of india ink or dye injected together with hyaluronidase (Guerra and others).

Guerra is of the opinion that rapid extension of the involvement of mesenchymal tissue in rheumatic fever suggests a partial removal of the protective barrier (hyaluronic acid?) offered by the tissue ground substance. Hyaluronidase is one of the substances capable of overcoming this barrier, although other enzyme systems may also be involved.

Lack of specificity of the relationship between hyaluronidase and rheumatic diseases is suggested by evidence that: (1) the inactivation of hyaluronidase by human serum is a complex reaction, the details of which are not yet completely understood; (2) the presence of inorganic ions such as chloride and phosphate may be as important as the relative concentrations of hyaluronidase and serum in patients with rheumatic disease (Meyer and Ragan); (3) changes in chondroitin sulfates and their protein complexes may be of greater importance for the rheumatic processes than the changes associated with hyaluronic acid (Meyer and Ragan), and (4) oral administration of salicylates affects the hyaluronic acid in synovial fluid, but it is unlikely that inhibition of hyaluronidase is the only (or even the most significant) modus operandi for the known antirheumatic effects of salicylates.

The evidence of a relationship between inactivation of hyaluronidase by human serum and the rheumatic diseases furnishes an interesting theory to explain the action of salicylates in rheumatic fever. However, at the present time the evidence must be considered more tentative than conclusive.

References:

1. Haas, E.: On the Mechanism of Invasion: I. Antivasin I, an Enzyme in Plasma, J. Biol. Chem. **163:** 63-88 (April) 1946.
2. Haas, E.: On the Mechanism of Invasion: II. Proinvasin I, an Enzyme in Pathogenic Bacteria, J. Biol. Chem. **163:** 89-99 (April) 1946.
3. Haas, E.: On the Mechanism of Invasion: III. Antivasin II, an Enzyme in Plasma, J. Biol. Chem. **163:** 101-110 (April) 1946.
4. Guerra, F.: The Action of Sodium Salicylate and Sulfadiazine on Hyaluronidase, J. Pharmacol. & Exper. Therap. **87:** 193-197 (July) 1946.
5. Meyer, K.: The Biological Significance of Hyaluronic Acid and Hyaluronidase, Physiol. Rev. **27:** 335-359 (July) 1947.
6. Meyer, K., and Ragan, C.: Hyaluronic Acid and the Rheumatic Diseases, Mod. Concepts Cardiovasc. Dis. **17:** no. 2 (Feb.) 1948.

## INTRAVENOUS ADMINISTRATION OF CHOLINE CHLORIDE

*To the Editor:*—In severe liver damage methionine has been used intravenously in dose of 5 to 10 Gm. in 3 per cent solution in 5 per cent dextrose. I believe that choline chloride has also been so used, as, for example, in carbon tetrachloride poisoning. What are the intravenous dose and method of administration of the latter? M.D., Pennsylvania.

Answer.—Choline chloride has been administered intravenously to laboratory animals and to man. Cats tolerate 15 mg. per kilogram of body weight without toxic effects, while 30 mg. per kilogram produces a reversible arrest of respiration. The material is rapidly destroyed in the body, presumably by cholinesterase in the liver. For this reason little appears in the urine after intravenous injection; 0.8 to 0.9 mg. per kilogram per minute in 0.2 or 0.4 per cent solution, in fact, may be injected practically indefinitely.

A survey of recent literature revealed no record of the intravenous use of choline in cases of hepatic injury; most investigators are content to give the material by the oral route. There is some evidence to show that it exerts its lipotropic effect on the fatty liver of human beings when given in this way (Beams, A. J.: J. A. M. A. **130**:190 [Jan. 26] 1946). However, proof of its activity in human beings is not conclusive. The same statement also may be made with regard to methionine, as the recent report of the Council on Pharmacy states (J. A. M. A. **133**:107 [Jan. 11] 1947).

In view of the fact that most studies on the effects of parenteral choline therapy are by no means recent, and since the indications for its use for human beings are not clearly defined, it does not seem advisable to employ it by the intravenous route in patients with hepatic injury or disease.

## ALLERGIC REACTION TO IMMUNIZATION

*To the Editor:*—I gave 1 cc. of diphtheria-pertussis-tetanus antigen combined to a boy 6 months old. After a few seconds the baby stopped breathing, his eyes closed, his body relaxed—apparently he was dead. External stimulation and a finger in his throat made the baby breath again.. There was no need of injecting epinephrine hydrochloride. The baby is normal and weighs 20 pounds (9,072 Gm.). Was this an allergic phenomenon? Should I give him the second and third injection? What precautions should I take? Frank Grimaldi, M.D., Brooklyn.

Answer.—The occurrence that you describe appears to have been an allergic reaction. However, if the antigen was injected intramuscularly, it is possible that some of the material entered a small blood vessel. For a while one of the biologic houses did not place a triple antigen on the market because of the difficulty in refining pertussis vaccine. At present, there is a triple antigen available which is administered in three doses of 0.5 cc. each, and it is claimed that unpleasant reactions are almost unknown. It might be well to perform a Maloney test for toxoid sensitivity. If the result is positive and further injections are to be given, it would be advisable to use a highly refined product (regular dose 0.5 cc.) and administer the second regular dose in divided quantities of 0.1, 0.2, and 0.2 cc. about five days apart. If there are no unpleasant reactions, the regular third dose of 0.5 cc. could be given in one injection about six weeks later. Should it be decided to continue the immunizations, it would be best to have the baby in a hospital when the procedures are performed.

## TREATMENT OF GASTRIC CRISIS

*To the Editor:*—Gastric crises of tabes dorsalis developed in a 58 year old man twelve years ago. He received treatment with tryparsamide and bismuth compound for three to four years without effect on attacks of vomiting. He then had six treatments with fever which stopped the gastric crises for five years. Vomiting attacks then recurred, and he has had three of them in the past fifteen months which incapacitated him for work for three to four weeks at a time. He presents the following positive physical findings: perforated nasal septum, Argyll-Robertson pupils, partial deafness, absent knee jerks and positive Wassermann and Kahn reactions (4 units). The spinal fluid shows: globulin normal, colloidal gold curve normal and Kahn reaction negative. What can be done to prevent recurrences of the gastric crises? Would penicillin be of value? If so, what is the recommended dose? M.D., Ohio.

Answer.—It is assumed that intrinsic gastrointestinal disorders have been excluded as possible causes for the vomiting attacks. Once true gastric crisis in the syphilitic has occurred, there is not at present any specific treatment that will insure prevention of recurrence. During attacks, the liberal use of atropine, sedatives and maintenance of water and electrolyte balance may shorten and reduce the severity of the episode. Morphine is to be avoided, particularly when attacks are frequent, because of the danger of addiction. Between attacks, vitamin B, in doses of 100 to 200 mg. daily, adequate diet and mild sedation are recommended. Autohemic injections at intervals of one to two weeks have been used with questionable success. Total body ultraviolet radiation, suberythemal doses at one to two week intervals, may be of some value. The possibility of the psychotherapeutic role of these treatments is obvious. Since emotional factors may play a part in the precipitation of crises, psychotherapy should not be overlooked.

If pain is severe and all other measures have failed, chordotomy may be tried. Interruption of the spinothalamic tract fibers at about the third dorsal segment has proved successful in relieving the pain of gastric crises in the majority of patients so treated. The vomiting attacks, being chiefly vagal in origin, cannot be expected to be affected by chordotomy. Section of the vagus nerves to the stomach has met with some success in the control of vomiting. From the experiences gained from the extensive employment of vagotomy in the treatment of peptic ulcer, one can reasonably expect a reduction of motility and tonicity of the stomach after complete vagus section.

If heavy metal therapy has not been adequate, penicillin may be given for that reason alone. Penicillin, however, has not been shown to prevent the recurrence of gastric crises, regardless of the status of antisyphilitic therapy.

## HISTAMINE REACTION

*To the Editor:*—A man, aged 30, began having spontaneous flushing of the skin four years ago. These attacks come on without warning, but are usually initiated by stress or strain as in a golf game, or in hot weather when he becomes overheated, or on physical exertion, such as lifting. His first sensation is tingling and burning around his face, then on the inner surface of the arms and in the axillas. The flushing of the skin and itching then spreads over his entire body. At the height of the attack his face is fiery red and has a mottled, splotchy appearance. This phenomenon usually clears up in thirty minutes; it occasionally lasts as long as an hour. He may have two attacks in the same game of golf. He averages two or three attacks a day. Antihistaminic drugs and other types of treatment have not helped. Please suggest diagnosis and treatment. M.D., North Carolina.

Answer.—The condition described most closely resembles the vasodilatation produced by excessive histamine release. While the stimulus in other cases may be allergy, cold or heat or may be emotional or perhaps of another type, the particular stimulus appears to be heat engendered internally. If there is a fall in blood pressure on these occasions it would be additional evidence of extensive histamine release. Antihistaminic drugs would be expected to be helpful. However, in this case the amount of histamine released may be too great to be combated by the average dose of antihistaminic drug. It is suggested that larger doses (such as a 100 to 150 mg. of tripelennamine hydrochloride) be tried. The medication should be given about one hour prior to the anticipated attack. A tolerance to heat may possibly be attained by systematic exposure to heat stimuli. One method would be to place the arms in hot water for about five minutes twice daily, to be followed each time by an immersion in cold water. In some cases injections of histamine have produced results. One procedure is to give 0.5 to 1 mg. of histamine in 500 cc. isotonic sodium chloride solution intravenously, taking two hours to complete the injection. Several such daily injections may create a more stabilized state. Another method is to give subcutaneous injections of histamine, preferably twice daily, over a period of several weeks, beginning with doses of about 0.10 cc. of 1:100,000 strength and gradually increasing until 0.20 or 0.30 cc. of 1:1,000 is reached.

## TREATMENT OF AMENORRHEA

*To the Editor:*—A high school girl aged 17 started menstruation at age 13. She had some pain but was regular. She went on a trip in 1947 and has not menstruated since. Her health is good. Indefinite abdominal pain which she complained of in childhood has completely stopped. A gynecologist reports no abnormality in uterus or ovaries. Basal metabolism tests on three occasions showed minus 31, minus 11 and minus 20 per cent. Physical examination did not elicit any abnormality. Treatment with thyroid extract for nine months, 2 to 3 grains (0.12 to 0.2 Gm.) daily with occasional interruptions and injection of estrogen and progesterone combined monthly (four months) thus far has produced no results (Zonder's method). Please suggest treatment and prognosis. M.D., New York.

ANSWER.—Amenorrhea is only a symptom; hence a cause must be sought. In some cases this is simple, but in many instances it is difficult or impossible. In the latter cases, treatment is usually unsatisfactory. Fortunately menstruation is restored spontaneously in some cases, with or without treatment.

In most instances of amenorrhea hormone therapy is used, but, whereas it is fairly easy to induce bleeding, this does not necessarily mean that the patient is having normal menstruation. In all cases a complete physical examination must be made to rule out not only pelvic but also general disturbances. Also the patient's nutrition should be investigated. In this case further studies should be made of thyroid function because of the three low basal metabolic rates. Thyroid therapy should be continued as long as it is necessary.

Bleeding may be induced by means of estrogens alone, estrogens plus progesterone, gonadotropins and radiation therapy. If estrogens alone are used 1 mg. of diethylstilbestrol should be prescribed every night for twenty-one nights, or 50,000 I. U. of estradiol dipropionate or benzoate given intramuscularly three times a week may induce bleeding. However, to produce cyclic bleeding this therapy must nearly always be repeated. The simplest way to use the combined estrogen-progesterone treatment is that recommended by Zondek, which consists of the administration of 25 mg. of progesterone plus 5 mg. estradiol benzoate during two days. This therapy also must usually be repeated to produce cyclic bleeding. If gonadotropins are used one may employ chorionic gonadotropins or equine gonadotropins or both. The results of gonadotropin therapy thus far are not satisfactory even when large doses are used. When this form of therapy is carried out the patient should receive five injections of 2,000 to 3,000 I. U. of equine gonadotropin at three day intervals followed by five injections of 6,000 I. U. of human chorionic gonadotropin at three day intervals. When all hormone therapy fails the last resort is radiation treatment, either to the pituitary or to the ovaries or to both. The results of this treatment are good, but there is considerable controversy considering the possible harm which may result from this type of treatment, the harm being to the third and fourth generation of offspring. This treatment should only be a last resort and should be carried out by an experienced roentgenologist who will use the proper technic and doses.

## CONVALESCENCE IN RHEUMATIC FEVER

*To the Editor:*—A boy, 7 years of age, became ill with rheumatic fever on Dec. 1, 1948. Onset was sudden and not preceded by an infection or other illness. His complaints were pain in wrist, shoulder and knee joints, migratory in type; fever, and transient macules of skin. The sedimentation rate (Wintrobe) was rapid, 93 mm. at sixty minutes. There were 27,000 leukocytes. For one day rheumatic peritonitis occurred. Heart rate was 120, with regular rhythm and without heart murmur. Temperature was 101 F. Five grains (0.3 Gm.) acetylsalicylic acid was given every two hours; multicebrin® (a multivitamin preparation) and 100 mg. ascorbic acid were given daily. A heart murmur, apex systolic, appeared within a few days and persists. Polyarthritis comes and goes. At the end of January the boy's temperature remained at 98 to 99 F., joint pain was gone and he felt "good"; Wintrobe sedimentation rate showed 14 mm. at fifteen minutes, 85 mm. at forty-five and 106 at one hour. Salicylates have been taken every two hours since onset of illness. An extrasystole every fifth beat with a dropped pulse beat occurs. On January 19, 1949, his temperature was 98 F.., joint pain was absent and he was still on the medication described. Sedimentation rate at this time is rapid—82 at sixty minutes. Please suggest treatment. When may the child be allowed out of bed? Loren G. Burt, M.D., Alma, Mich.

ANSWER.—The clinical course is characteristic of rheumatic fever. The acute phase has passed, but active disease persists, as indicated by the abnormal sedimentation rate. Factors other than the sedimentation rate are useful in appraising continued rheumatic activity during the convalescent period. It is reassuring to have freedom from symptoms and a normal temperature after cessation of salicylate therapy. It is now safe and essential to omit the acetylsalicylic acid unless there is a return of joint symptoms. An improvement in appetite and a steady gain in weight would be reassuring. A normal conduction time (P-R interval) in the electrocardiogram would also be helpful information.

In summary, when the child is off salicylates, is afebrile, symptom free and gaining weight, and when the white blood cell count and the sedimentation rate have returned to normal, it is safe to allow slowly increasing activities over the ensuing months.

## CHRONIC INFECTIOUS MONONUCLEOSIS

*To the Editor:*—In The Journal, January 22, page 258, an article on chronic infectious mononucleosis by R. Isaacs is abstracted from the journal *Blood*. This article discusses use of adrenal cortical extract in the treatment of this condition. I have a 4 year old white female patient in whom the symptoms leukocytosis and relative monocytosis have persisted since the acute stage of the disease last August and would appreciate an opinion on the efficacy of this treatment. My patient does not have leukemia, at least at present. Her 6 year old sister had acute infectious mononucleosis fourteen days after this patient, and has completely recovered. Kenneth D. Rose, M.D., Lincoln, Neb.

ANSWER.—Scientific evidence is not available that adrenal cortical extract has any specific effect on the wide range of symptoms and pathologic lesions in infectious mononucleosis. Virtually all of the clinical symptoms in infectious mononucleosis have been explained on the basis of perivascular aggregates of normal and abnormal lymphocytes that may involve most of the organs and tissues of the body with the exception of the bone marrow. The occurrence of lymphocytes in the adrenal glands is difficult to evaluate in relation to this disease since this finding is so common in the average series of autopsies. Absolute lymphocytosis may persist for several months after infectious mononucleosis, but if it persists for six months as in the 4 year old child, the diagnosis must be considered in doubt unless it has been fully established by the finding of the characteristic atypical lymphocytes in the blood and by a positive reaction to a heterophil antibody test. The presence of leukocytosis and monocytosis in this child is not clear, since, characteristically, absolute lymphocytosis is found in infectious mononucleosis. Further clinical and laboratory data are necessary in this child to make sure that the disease is not a leukemic process or an infectious disease other than infectious mononucleosis. Sternal aspiration would be indicated in this case. For infectious mononucleosis there is no specific therapy; treatment is symptomatic as in other acute infections.

## OPTIC NEURITIS IN MULTIPLE SCLEROSIS

*To the Editor:*—Is optic neuritis an early and important diagnostic manifestation of multiple sclerosis? Recently, in a young woman, optic neuritis developed on one side followed not long after by involvement on the other. Her abdominal reflexes are suggestive of beginning multiple sclerosis. Other signs are absent at this time. M.D., Illinois.

ANSWER.—Optic neuritis is frequently an early and important sign of multiple sclerosis. The primary lesion is a retrobulbar neuritis, with a selective involvement of the papillomacular bundle at any level in the optic pathway. If the focus in the nerve is close to the nerve head, associated edema and other signs of optic neuritis by ophthalmoscopic examination are to be expected. Lesions distant from the disk may not cause intraocular changes in the acute stage. Rarely the retinal changes are so marked, with papilledema, hyperemia of the disk, overfilling of veins, blurred margins, an obscured physiologic cup, hemorrhages and exudates, and star-shaped figures at the macula, as to be confusing with the papilledema due to increased intracranial pressure. A central scotoma in the visual field, however, is essential to the diagnosis. Loss of vision varies within wide limits.

Without other signs of multiple sclerosis, optic neuritis is only a presumptive diagnostic sign of the disease. Watkins (Watkins, A. L.: The Cerebrospinal Fluid in Optic Neuritis, "Toxic Amblyopia" and Tumors Producing Central Scotomas, *New England J. Med.* 220:227-231 [Feb. 9] 1939) found many causes, other than multiple sclerosis, for retrobulbar neuritis, but when changes were found at the same time in the colloidal gold reaction of the cerebrospinal fluid, particularly if the abnormality was in the first zone, multiple sclerosis was almost certain to be present or to follow in later years. In 40 cases of acute retrobulbar neuritis, Watkins found evidence of multiple sclerosis, before, coincident with or after their visual disturbances in 27 per cent. The incidence rose to 50 per cent when 18 of the cases were followed for more than three years. In 39 patients with chronic retrobulbar neuritis, with slow onset, 15 per cent proved to have multiple sclerosis. This also was the experience of Adie (Adie, W. J.: Observations on Aetiology and Symptomatology of Disseminated Sclerosis, *Brit. M. J.* 2:997-1000 [Dec. 3] 1932), who observed retrobulbar neuritis in 41 of 148 cases of multiple sclerosis. Retrobulbar neuritis, if observed in the subacute stages, is characterized by pallor of the optic disk only, usually limited to the inferotemporal third, with the other two thirds normal in color, indicating an involvement of the papillomacular bundle alone. The subject is thoroughly reviewed by Walsh (Walsh, F. B.: Clinical Neuro-Ophthalmology, Baltimore, Williams & Wilkins Company, 1947).

Loss of abdominal reflexes is also an early sign of multiple sclerosis.

## ESTIMATION OF AGE OF FETUS

**To the Editor:**—Where can I obtain information relevant to roentgen diagnosis of month or week of intrauterine pregnancy?

H. A. Weisse, M.D., Plymouth, Wis.

Answer.—As emphasized by William Snow (Clinical Roentgenology of Pregnancy, Springfield, Ill., Charles C Thomas, Publisher, 1942), various criteria have been proposed for obtaining the age of the fetus in utero from roentgen examinations. Some look for the degree of bony development and the appearance of bony epiphyses. Others use the length of one bone, while still others consider the length of the occipital frontal diameter of the skull or perimeter. Others try to gage the total length of the fetus from heel to crown. The multiplicity of methods indicates that none is entirely satisfactory. The estimates are approximate. Whenever possible, the clinical examination should be coordinated with the roentgen observations.

For greater accuracy in deriving the fetal age Snow calculates the perimeter of the skull. Paul C. Hodges determined the age of the fetus in weeks by roentgen examination from the formulas of Scammon and Calkins. He used the net perimeter of the skull from two roentgenograms taken at right angle to each other and corrected for distortion according to Ball. Snow compared his figures with a series in which he had undertaken roentgen pelvic cephalometry shortly before delivery where the pregnancy had ended prematurely and found general agreement but with sufficient variation to indicate that caution must be exercised in the use of the figures. Experience with cephalic measurements near term proves that this is much more reliable. There is no great difficulty in recognizing from such roentgen examinations the approximate age of the fetus. In Snow's book are charts showing general relationships between fetal size and fetal age and also general relationships between skull perimeter including scalp thickness, fetal age, weight and height.

## USE OF INSULIN WITH DEXTROSE INTRAVENOUSLY

**To the Editor:**—What is the rationale, if any, for one's covering the dextrose *in fluids administered intravenously with insulin in nondiabetic patients?* Does it prevent the overflow of sugar in the urine and if so is it utilized as carbohydrate by the patient? Is it stored as glycogen in the liver or does it become muscle glycogen? Please explain the physiology involved.

M.D., New York.

[This inquiry was referred to two authorities, whose respective replies follow.—Editor.]

Answer.—There is not any good reason for "covering the dextrose in fluids administered intravenously with insulin in nondiabetic patients." In fact, the addition of insulin may defeat one of the important purposes for which dextrose is given; namely, to insure a good store of liver glycogen. The nondiabetic person has an optimal amount of insulin present as far as the deposition of liver glycogen is concerned. Any exogenous insulin represents an excess, which tends to drive glycogen out of the liver and into the peripheral tissues, chiefly the skeletal muscles. Hence, while more of the administered sugar is retained, it is not held where it will do the most good. An explanation of the physiology involved may be found in the section entitled "Physiologic Basis of Intravenous Dextrose Therapy for Diseases of the Liver" on page 277 of the monograph "Carbohydrate Metabolism," by Soskin and Levine, University of Chicago Press, 1946.

Answer.—A number of writers in the past advocated the use of insulin combined with intravenous administration of dextrose in the treatment of nondiabetic patients suffering toxemias of pregnancy, ketonemic cyclic vomiting in children, toxic diphtheria, acute hepatic disease and other conditions. But in the nondiabetic subject without a deficiency of endogenous supplies of insulin and without a deficiency of insulin there is little reason to believe that extra insulin would aid or favor in any way the utilization of intravenously administered dextrose. There is, in fact, reason to fear that excessive amounts of exogenous insulin might have a deleterious effect in patients suffering toxicosis if hypoglycemia were induced. Under certain conditions overdosage of insulin has been shown to promote formation of muscle glycogen at the expense of liver glycogen.

## PREVENTION OF RHEUMATIC FEVER

**To the Editor:**—What is the present status of prevention of rheumatic fever with sulfonamide drugs or penicillin? R. S. Srigley, M.D., Hollis, Okla.

Answer.—The most frequent precipitating factor antedating the appearance of rheumatic fever is streptococcic infection of the upper respiratory tract. Numerous observers have shown that the incidence of respiratory infections in susceptible children is significantly reduced by small daily doses of sulfonamide drugs, and hence the chance of subsequent rheumatic fever is likewise lessened. It is also well known that in a certain number (perhaps 10 to 15 per cent) of children leukopenia develops and others show renal irritation during this type of therapy. For this reason a close watch on the blood and urine must be kept, especially during the first month or so of therapy, as well as at intervals thereafter. In rare instances a peculiar hypersensitivity to sulfonamide compounds may result in periarteritis nodosa, or even in an obscure form of myocarditis.

The usefulness of penicillin in combating streptococcic infection of the upper respiratory tract has been established. The daily use of this antibiotic over long periods as a protective measure is still in the exploratory stage.

## THIOCYANATE POISONING

**To the Editor:**—Is there any indication that prolonged use of potassium thiocyanate for hypertension produces anemia?

Alfred H. Weitkamp, M.D., Los Angeles.

Answer.—Potassium or other thiocyanates may give rise to a variety of acute and chronic symptoms due to the toxicity of the thiocyanate radical. In large doses it may be acutely fatal, and the prolonged administration of as little as 0.5 Gm. daily may lead to a fatal outcome. The symptoms of thiocyanate poisoning are variable and include a number resembling iodism (fever, skin reactions, goiter), weakness and fatigue, aching and cramping of the muscles, abdominal distress, nausea, diarrhea, mental confusion, aphasia, convulsions, toxic psychosis and, in cases of chronic poisoning, marked anorexia, emaciation and anemia. In animal experiments, the repeated administration of sublethal doses of the thiocyanates causes also a diminution in hemoglobin content with the development of anemia. Inasmuch as this anemia is accompanied by evidence of renal damage as well as by gastrointestinal symptoms, it is unknown whether the observed effect on the hemopoietic activity is secondary to these changes or due to direct toxic effect on the bone marrow.

## FRIGHT AND FETAL DEATH

**To the Editor:**—Is there any evidence that fright may cause fetal death at the eighth month of pregnancy, and, if there is, what is the mechanism of such death? Leon Melkonian, M.D., Gilroy, Calif.

Answer.—Evidence apparently is not available to support the belief that fright can cause death of the fetus in utero. In a toxic patient with blood pressure markedly elevated, sudden release of epinephrine theoretically might be considered to raise the blood pressure enough to cause abruptio placentae. Another theoretical consideration might be that if the fright were great enough the patient might possibly contract the abdominal muscles and diaphragm with enough force to separate the placenta. In either of these considerations prodromal signs or sequelae should demonstrate the trouble.

## ETHER IN THROMBOANGIITIS OBLITERANS

**To the Editor:**—What information have you regarding treatment of Buerger's disease (thromboangiitis obliterans) by means of ether injection in dextrose *solution? Is this practice safe?* M.D., Illinois.

Answer.—Intravenous injections of ether have been proposed for the treatment of gangrenous or pregangrenous extremities. The injection may cause a temporary vasodilatation and evanescent euphoria. Evidence that it exerts a favorable influence on the course of Buerger's disease is lacking. Its use is not devoid of side reactions.

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# DEFICIENCY DISEASES IN THE CINCINNATI GENERAL HOSPITAL

## A Ten Year Study

### Chairman's Address

M. A. BLANKENHORN, M.D.
Cincinnati

From time to time within the past decade medical publications have appeared describing patients in the Cincinnati General Hospital who were ill because of vitamin deficiency. In 1942 a statistical study revealed an incidence of pellagra in that hospital similar to that reported from New Orleans; Augusta, Ga.; Birmingham, Ala.; Durham, N. C., and from other southern cities where pellagra had been regarded as a common endemic disease. Our report in 1942[1] described an incidence which began in 1935 at 0.3 per cent of all medical admissions and rose each year to 1.5 per cent in 1938. Now it has been determined that since 1939 the incidence has gradually declined so that in 1947 and 1948 there were no cases of pellagra. A personal communication from Dr. Norman Jolliffe has described a similar situation at Bellevue Hospital, New York. It was believed that there had been only an apparent increase in the disease in the community incident to increased interest in the hospital. Now with the same circumstances which determine the admission of patients and with the same methods and zeal for diagnosis—and, in fact, the same individual physicians—there has been a notable decrease.

### SCOPE OF THE STUDY

In a recent study which brought these facts about pellagra to print,[2] it was observed by the authors that the decline started before there was enriched flour or other concerted effort at dietary reform in Cincinnati. There was as elsewhere a change in business, employment and wages, the effects of which are profound but not directly measurable on the type of person furnishing most of the hospital admissions. Beriberi and also scurvy have been closely studied in the same period, but a similar decline has not been observed. Without attempting to explain why the incidence of deficiency diseases fluctuates in this manner, I propose herein to describe all of them that have been diagnosed in the past ten years, together with some of the medical, social and economic factors which, as I see them, may be concerned in nutrition and the public health. From 1939 to 1948, on a service which admits about 200 patients a month, pellagra has been diagnosed in 106 persons, beriberi in 48, scurvy in 33, riboflavin deficiency as cheilosis in 14, sprue in 4, vitamin A deficiency in 1 and vitamin D deficiency in 1. It cannot be stated how many of these patients were admitted solely for the deficiency disease which was eventually diagnosed. Many were admitted for a variety of other conditions, acute and chronic, and the deficiency disease was found to be a sequel or incidental to the other illness. During the entire period no special medical service such as a nutritional ward was maintained, and the continuous demand for hospital beds has made the admission of patients with minor though interesting forms of disease almost impossible. There has never been a routine laboratory test or screening method for case finding. The usual bedside clinical examination has been the method in continuous use for diagnosis, with laboratory devices used secondarily and for confirmation. Only cases observed on the medical wards are here described, although a few were discovered on other services in the routine of consultations. When treatment required it, the patients were transferred.

In vitamin B deficiency syndromes, house officers have considerable difficulty with the decision as to which of several diagnoses should be considered primary, or the leading cause for disability. In such dilemmas in which the two diseases, pellagra and beriberi, are present no patient has been counted twice in this study of incidence. However, some patients may on readmission have been found with a different disease—for example, scurvy.

The diagnosis of pellagra was established by observation of characteristic symmetric dermatitis, usually of the hands or feet, or both, and glossitis.

### PELLAGRA

There were 106 patients whose disease was diagnosed as pellagra; 68 were white, 38 were Negro; 58 were men, 48 were women; the oldest was 84, the youngest was 20; the mean average age was 53.6 years; in 33 pellagra was caused by alcoholism; in 66, by some other disease, acute or chronic. These diseases were in the main of the same nature as those indicated in an article on secondary pellagra, published in 1944 in *Medicine*.[3] It should be restated now that there are no distinguishing features in various stages of the disease. Pellagra is pellagra, and at this hospital the term secondary pellagra is no longer used. Study

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From the Department of Internal Medicine, University of Cincinnati College of Medicine, and the Cincinnati General Hospital.

Read before the Section on Internal Medicine at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

Miss Ruth Roth, secretary of the Nutrition Council, Cincinnati Public Health Federation, provided data concerning the prices of specific foods and the cost of living index.

[1] Bean, W. B.; Spies, T. D., and Blankenhorn, M. A.: The Incidence of Pellagra in Ohio Hospitals, J. A. M. A. **118**:1176 (April 4) 1942.

[2] Bean, W. B.; Vilter, R. W., and Blankenhorn, M. A.: The Incidence of Pellagra in the Cincinnati General Hospital, 1935-1947, J. A. M. A. **140**:872 (July 9) 1949.

[3] Bean, W. B.; Spies, T. D., and Blankenhorn, M. A.: Secondary Pellagra, Medicine **23**:1, 1944.

of these patients now throws no light on the pathogenesis of pellagra other than that observed in 1942. In only 16 patients could no cause for the disease be determined; hence it must be assumed that poverty and ignorance in matters of diet were the cause. Ignorance has proved a difficult etiologic factor to assess, qualitatively or quantitatively, but in the matter of dietary habits it has been determined that many patients prefer cornbread, fat meat and well boiled greens, as in so-called southern cooking. Of 106 patients, exactly 53 were born south of the Mason and Dixon line and were presumed to be accustomed to southern cooking. In this ten year period one half of all medical patients were born in the South. I believe the dietary habits prevalent in Cincinnati among those of southern origin have much to do with the high incidence of pellagra, but it is difficult to put the matter to a test.

Poverty is perhaps equally difficult to study. Cincinnati has it, but it is no worse than in comparable cities. During the ten year period employment and wages have steadily risen; so has the cost of food in almost parallel manner. Since many of our patients were unemployable, their poverty became greater as living costs became higher. The cost of all food rose from a price index of 95.2 in 1939 to 209.7 in 1948—120 per cent. The cost of greens, which may be considered essential to diet and may be chosen as a characteristic protective food, rose from an index of 0.045 to 0.135, or 200 per cent. Lean meat is equally important in the prevention of pellagra, and the cost of it certainly is a factor in its distribution and consumption. In Cincinnati the cost of lean meat (hamburger steak) has risen nearly 300 per cent in the same time that the incidence of pellagra has diminished. It is impossible to learn the actual consumption of these food items by the persons who are admitted to the Cincinnati General Hospital. A dietary history is taken in all instances, but this is unreliable except when done by an expert, who is not always available. It can be shown that in recent years it has become more difficult to buy pellagra-preventing foods than food in general. Enriched flour began to be used in this city in 1941, and, by 1943, 90 per cent of all the flour consumed was enriched.

Forty-four of the 106 pellagrins also had other specific deficiency diseases; for example, neuritis, cheilosis, vitamin A deficiency and scurvy. Many were found also with Wernicke's syndrome (presbyophrenia), hypertrophic or atrophic gastritis, hyperchromic anemia and hypoproteinemia—but these manifestations are considered essential to pellagra and therefore are not listed among the forty-four associated deficiency diseases. I do not include either delirium tremens or cirrhosis of the liver as an associated deficiency. There were only 8 patients with cirrhosis as an associated disease, which seems remarkable, because 33 of 106 pellagrins were chronic alcoholic addicts and had been on poor diets for a long time. In our 1942 report of collected literature cirrhosis was found to be a common cause of so-called secondary pellagra. Twenty-nine of the 106 patients died in the hospital, and 19 necropsies were performed. Altogether, complete study failed to disclose an obvious cause for death in 9 cases. It should be noted that none of the lesions of pellagra are, anatomically speaking, regarded as lethal. These 9 deaths were ascribed, then, to the prolonged and severe effects of malnutrition and to nothing else. In several cases the heart was enlarged rather than smaller, as is usual in cases of starvation. In none of this group had the diagnosis of beriberi heart been made, but it could not be excluded. Of especial interest are the 16 patients in whom chronic associated disease and/or alcoholism were not discovered; i. e., those who fell into poor dietary habits because of ignorance and poverty. Ten were born in the South. They had been long resident in Cincinnati and were comparable in age to the entire group. Four died and 3 were examined post mortem; all 3 exhibited no cause for death other than pellagra. The fatality rate, 27 per cent for this group of 106 patients, is necessarily high because of their associated diseases and chronic alcoholism. In cases of uncomplicated pellagra there were 4 deaths; i. e., a fatality rate of 25 per cent. This apparent failure of treatment was due to the severity and advanced stage of the disease, because nicotinic acid or nicotinamide were freely used in conjunction with good diet.

### BERIBERI

The diagnosis of beriberi (neuritis due to thiamine deficiency) was made in 48 subjects exclusive of the patients with pellagra as the chief disease and berberi as an associated disorder. Of the 48, 45 were white, 3 were Negro; 34 were men, 14 were women; the youngest was 27, the oldest was 76; the mean average age was 53 years. Of the diagnostic criteria described by Aring and Spies,[4] absent or decreased tendon reflexes with tenderness of the nerve trunks and sensory changes were always observed. Few patients were paralyzed, and none remained paralyzed for long after treatment was started. Sixteen were found to have beriberi heart according to the criteria published by me in 1945 and again in 1947 in association with C. Vilter[5]: (1) enlarged heart with sinus rhythm; (2) dependent edema; (3) elevated venous pressure; (4) minimal electrocardiographic changes; (5) absence of all other causes of heart disease; (6) history of three or more months of a diet deficient in thiamine; (7) signs of neuritis or pellagra, and (8) recovery with decrease in heart size or observations at autopsy consistent with beriberi heart. Of the 48, 24 were classed as chronic alcoholic addicts and 19 as ill with other disease of a wasting nature, leaving 6 in whom no cause for the pellagra was discovered. Fifteen patients displayed other deficiency disease, and 4 had only cirrhosis. Nine had forms of cardiac disease other than beriberi heart. Eighteen died, a fatality rate of 37 per cent. Eleven necropsies were performed. In this as in the pellagra group, fatality rates were high because of severe associated disease, prolonged alcoholism and severe beriberi. Deaths from delirium tremens are not recorded in this group. In a number of instances no obvious cause for death was apparent; i. e., as morbid anatomy of gross nature. In some patients death was sudden and unforeseen. Vilter and I described patients in this group as subject to syncopal attacks and unexpected death.

### SCURVY

Adult scurvy was diagnosed 33 times, with the criteria described by R. Vilter[6]: large cutaneous hemorrhages; hemorrhagic follicular keratosis and hemorrhagic gingivitis, and anemia, all of a type which are the classic signs of severe adult scurvy. Of the 33 patients, 31 were white and 2 were Negro; 29 were men, 4 were women; the youngest was 16, the oldest was 79; the mean average age was 61.5. Only 5 of the 33 were born in the South. There was chronic alcoholism in 5, associated disease in 13 and no known cause in 15. The associated diseases were similar to those described in association with pellagra. There were associated deficiency states, also principally due to lack of thiamine. There was but 1 patient with cirrhosis. Six died—a fatality rate of 18 per cent. It is notable that in 3 instances the cause of death could not be designated at necropsy. In each, beriberi heart could have been present but was not diagnosed because the usual criteria were wanting, but scorbutic hemorrhage was not the cause of death. A search of the social history in this group reveals that almost all of the patients were white men over 60 years of age who lived alone as recluses or on scanty income in a cheap lodging, where they did their own cooking. They were not especially addicted to alcohol, but they did not eat fruit or uncooked vegetables. There was no particular seasonal incidence (months). They were not habituated to southern diet. Many had not lost weight but had gradually become weak, mentally depressed and, eventually, confused; their neighbors or the police brought them to the hospital. The incidence of adult scurvy has risen from zero in 1939, 1940 and 1941 to an index of 0.38 in 1945. It has declined only slightly in 1946, 1947 and 1948, but not to the extent to which pellagra has. Meanwhile, the cost of citrus fruits has dropped 20 per cent from 1939 to 1948. It is obvious that the relative cost of avoiding scurvy has not increased but has indeed decreased. Meanwhile, the incidence has not declined as has that of pellagra. Associates and I are of the opinion that living habits are mainly responsible for the ill health of these persons.

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[4] Spies, T. D., and Aring, C. D.: The Incidence of Neuropathy in Pellagra, Am. J. M. Sc. **199**: 840, 1940.

[5] Blankenhorn, M. A.; Vilter, C. F.; Scheinker, I. M., and Austin, R. S.: Occidental Beriberi Heart Disease, J. A. M. A. **131**: 717 (June 29) 1946.

[6] Vilter, R. W.; Woolford, R. M., and Spies, T. D.: Severe Scurvy, J. Lab. & Clin. Med. **31**: 609, 1946.

### OTHER DEFICIENCY DISEASES

Riboflavin deficiency is such a poorly defined disease that I shall give it but brief mention. The diagnosis was made on this service when a patient displayed angular cheilosis, conjunctivitis and a magenta-colored glossitis. This disease was diagnosed in 14 persons who were probably mildly ill with pellagra but were without symmetric dermatitis. Now with greater criticism or perhaps clinical skepticism, the disease either has become rare in Cincinnati or is ignored. The decision about magenta coloration is difficult; the conjunctivitis and cheilosis are not specific, nor do they respond specifically to treatment.

Sprue, vitamin A deficiency and vitamin D deficiency are so uncommon that they need only be listed as rare.

### SUMMARY

Pellagra in the Cincinnati General Hospital has declined from an incidence in late 1930 and early 1940 of 1.2 per cent to a low of few or no cases in 1947 and 1948. The cause of this decline is obscure. It started before use of enriched flour became general and has continued despite the rising cost of food and especially the greater rise in the cost of greens and lean meat. The probable cause of the decline is dietary reform initiated by public health education and continued by the use of enriched flour. Pellagra occurred mainly in white persons, about equally in men and women. Assuming that poor diet is the cause, debilitating disease was contributory in more than half the cases, chronic alcoholism in a third. In 15 per cent of patients no cause for the disease other than a poor diet was discovered. One half of all pellagrins were born in the South and probably were accustomed to a diet low in thiamine and nicotinic acid. The fatality rate of the group was 27 per cent.

Beriberi occurred mainly in white men in the middle fifties and occasionally in women. Assuming that thiamine deficiency is the cause, chronic alcoholism was a contributary cause in 50 per cent and other disease in 37.5 per cent; the beriberi was without apparent cause in 12.5 per cent of patients. In 33.33 per cent there was beriberi heart. The fatality rate of the entire group was 37 per cent.

Scurvy occurred almost entirely in old men over 60 who lived alone or in lodgings. Chronic alcoholism and other disease were additional causes in less than one half. Dietary habit and poverty were the most frequent causes of the disease. The fatality rate was 18 per cent.

One half of the deficiency disease observed in the Cincinnati General Hospital was caused by other acute and chronic disease, and one third by chronic alcoholism. There has been decided reduction in the incidence of pellagra. This reduction is probably the result of dietary reform and the enrichment of flour. Beriberi has been reduced little and scurvy less.

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# ARTANE® THERAPY FOR PARKINSONISM

## A Preliminary Study of Results in One Hundred and Seventeen Cases

LEWIS J. DOSHAY, M.D.
and
KATE CONSTABLE, M.D.
New York

Trihexyphenidyl (artane,® 3-[1-piperidyl]-1-phenyl-1-cyclohexyl-1-propanol hydrochloride) is a member of a new series of antispasmodic compounds.[1] After intensive pharmacologic investigation [2] of its effects and of reactions to the drug in animals, the product was turned over to us for clinical evaluation. Its effects were carefully studied in a series of 117 cases of Parkinson's disease. (Since the preparation of the paper, the drug has been employed by us in some 150 additional cases with favorable results, but the observations were not available in time to be incorporated with the earlier cases.) Embodied in this report are the method of administration and use of trihexyphenidyl, correlated with the results of the therapy and the reactions of the patients.

The drug has been under study at several other clinics, and, although a detailed comparison of such data with our own has not yet been made, verbal reports are to the effect that other results fairly closely coincide with our own.

In an article published by one of us two years ago,[3] special attention was drawn to the need that exists for new preparations to be added to those regularly employed in the treatment of parkinsonism. The

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Because of lack of space, this article has been abbreviated in The Journal by omission of the tabular data. The complete article will appear in the authors' reprints.

The investigation was conducted at the Vanderbilt Clinic, New York City, under the Department of Neurology, College of Physicians and Surgeons, Columbia University and Neurological Institute.

[1] Cunningham, R. W.; Harned, B. K.; Clark, M. C.; Cosgrove, R. R.; Daugherty, N. S.; Hine, C. H; Vessey, R. E., and Yuda, N. C.: The Pharmacology of Some Omega-Mono-Piperidene Tertiary Alcohols: New Antispasmodic Agents, J. Pharmacol. & Exper Therap., to be published.

[2] Artane® was developed by Lederle Laboratories, Division of the American Cyanamid Company.

[3] Doshay, L. J.: Recent Trends in the Treatment of Parkinsonism, M. Rec. **160:** 339, 1947.

standard drugs to which reference was made include: scopolamine, stramonium, atropine, Bulgarian belladonna, rabellon® (a tablet containing belladonna alkaloids) and vinobel® (a tablet containing the alkaloids of belladonna root obtained by extraction with wine). In the light of this manifest need, the success which has attended the use of artane® is highly gratifying.

Parkinsonism has been an important and challenging problem to the neurologist for the past thirty years. Prior to 1918, parkinsonism was chiefly of the arteriosclerotic variety and as such did not pose too great a problem in terms of treatment, which essentially embraced hyoscine, stramonium and potassium iodide. However, the span of life has been materially lengthened in recent decades by the marvelous advances of medical science, so that we are becoming confronted with ever-increasing numbers of such cases.

In particular, however, the epidemics of encephalitis of 1918-1921 contributed a new and grave situation.[4] All efforts during the twenties were confined to the discovery of a vaccine that would successfully prevent encephalitis or check its course and symptoms. The effort failed.[5] Attention thereupon shifted toward the maximum exploration of various plant extracts to combat the symptoms of rigidity, oculogyria and tremor. It thus happened that Bulgarian belladonna was heralded with great promise in the thirties.[6] Although this drug failed to fulfil original expectations, it has nevertheless continued in use as a good adjunct in the treatment of Parkinson's disease, along with such other products as atropine and various alkaloids of belladonna.

During the past decade surgery made a strong bid for the relief of parkinsonism, but results thus far have proved sadly disappointing, because the determining site of the pathologic basis of tremor and rigidity remains unknown, rendering it difficult to know where and what to cut. Under the circumstances, it is not surprising that some surgeons operate on the subcortex, others on the lenticular nucleus or the pallidofugal tracts and still others on the spinal cord.[7] This ceaseless search to find relief for those who suffer with Parkinson's disease leads to the present era of synthetic drugs.

### PHARMACOLOGIC PROPERTIES OF TRIHEXYPHENIDYL

Artane® is the trade name given to the synthetic product 275 C, which bears the structural formula of 3-(1-piperidyl)-1-phenyl-1-cyclohexyl-1-propanol hydrochloride and the generic name trihexyphenidyl. It was carefully tested, along with five other closely related synthetic products, for comparative determinations of their antispasmodic activities, pharmacologic effects and toxic reactions in relation to known drugs such as atropine and trasentin® (diphenylacetyldiethylaminoethanol hydrochloride). Six months of such experimentation with large numbers of various laboratory animals proved that trihexyphenidyl has greater antispasmodic qualities than any of the other five synthetic products and in this regard is twenty times as effective as trasentin® and half as effective as atropine. Similar to all antispasmodic drugs, the compound leads to cerebral excitation, but unlike the other five piperidyl derivatives it does not lead to convulsions, even under massive dosage. It has about half of the mydriatic and an eighth of the antisialogogue potency of atropine, and the inhibition of the cardiac vagus is only one-hundredth that of atropine. Lastly, it has no ill effects on blood pressure, respirations, blood cell count, kidneys, liver, metabolism of sugar, growth or reproduction in dogs, cats, rabbits, guinea pigs and rats. On the basis of the observations, it is evident that the compound possesses large elements of the favorable effects of atropine, without its dangerous components.

Use of trihexyphenidyl in the treatment of parkinsonism was suggested by an analysis of its pharmacologic properties in animals.[8] At this point we commenced trial of the product with our patients. By January 1948 its effects and reactions had been closely checked in some 20 patients with Parkinson's disease. Since then the series has rapidly expanded to include at present almost 270 cases, although for reasons previously stated we are reporting on only 117 cases, which have been followed most thoroughly and for the longest period.

### METHOD OF ADMINISTRATION

Trihexyphenidyl was supplied in scored tablets of two sizes, 2 mg. and 5 mg., thus facilitating the administration in doses of 1, 2, 2.5 and 5 mg.

It was found that in postencephalitic parkinsonism larger doses are necessary than in arteriosclerotic or idiopathic forms of the disease. This observation was not unexpected, because the drug has properties similar to those of atropine, to which, according to common experience, postencephalitic patients present high tolerance.[9]

In mild and only moderately advanced cases one should start with a dosage of 1 or 2 mg. twice a day, increasing it to three or four times a day, as the condition and response of the patient warrants.

Since nearly all postencephalitic patients suffer from varying degrees of sialorrhea, it was found that antecibum administration was more effective among them. In cases in which tremor was the most disturbing symptom it was necessary to add a small dose of scopolamine to the trihexyphenidyl. In advanced cases, in which patients have become accustomed to large doses of other drug, we have at times found it desirable to start with half of a 5 mg. tablet of the compound two or three times a day, while reducing the high dosage of the drug which the patient has been taking and thus gradually changing over to trihexyphenidyl alone. Thus a patient has been changed not suddenly but gradually from Bulgarian belladonna or a proprietary alkaloid of belladonna to trihexyphenidyl. In postencephalitic patients with excessive sialorrhea and rigidity, small amounts of atropine solution may need to be added.[10]

Trihexyphenidyl has been used in the idiopathic group in approximately the same manner and dosage as with postencephalitic patients. Since many of the former group have also some degree of sialorrhea, antecibum administration of the drug is likewise favored. By suitable adjustment of the dose to tolerance, these patients do well on the compound. Even so, the following rule should be adhered to in the treatment of all patients with parkinsonism: Since we have no cure for them, and there is none in the offing, the purpose of all available therapy should be to render the patient as happy, active and useful as possible. Hence, it is never wise to force a new remedy on a patient who is content with his present regimen of treatment.

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[4] Epidemic Encephalitis: Etiology, Epidemology, Treatment, Report of a Survey, the Matheson Commission, New York, Columbia University Press, 1929.

[5] von Witzleben, H. D.: Methods of Treatment in Post-Encephalitic Parkinsonism, New York, Grune & Stratton, Inc., 1942, p. 52.

[6] Alcock, N. S., and Carmichael, E. A.: An Investigation into the Treatment of Parkinsonism with Bulgarian Belladonna, Quart. J. Med. **7:** 565, 1938. Hill, D.: Bulgarian Treatment of Post-Encephalitic Parkinsonism: A Comparison with English Belladonna, Lancet. **2:** 1048, 1938. Neal, J. B., and Dillenberg, S. M.: Comparison of Belladonna and Other Forms of Medication in Treatment of Chronic Encephalitis, New York State J. Med. **40:** 1300, 1940. Neal, J.: Recent Advances in Treatment of Epidemic Encephalitis, ibid. **34:** 707, 1934.

[7] Browder, J., and Meyers, R. A.: Surgical Procedure for Post-Encephalitic Tremors, Tr. Am. Neurol. A. **66:** 176, 1940. Bucy, P. C. and Case, T. J.: Tremor: Physiologic Mechanism and Abolition by Surgical Means, Arch. Neurol. & Psychiat. **41:** 721, 1939. Putnam, T. J.: Operative Treatment of Diseases Characterized by Involuntary Movements (Tremor, Athetosis), A. Research Nerv. & Ment. Dis., Proc. (1940) **21:** 666, 1942.

[8] Harned, B. K., and Cunningham, R. W., oral communication to the authors.

[9] Bremer, F. W.: High Atropine Tolerance in Post-Encephalitic Parkinsonism, Deutsches Arch. f. klin. Med. **149:** 340, 1925.

[10] Doshay, L. J.: Moderate-Dosage Atropine Treatment of the Parkinson Syndrome, New York State J. Med. **42:** 1066, 1942.

The drug is effective in the arteriosclerotic group in smaller doses than in the postencephalitic. Many patients are comfortable on a dosage of 1 mg. two or three times a day. The dosage can then be raised gradually to the optimum level for the particular patient. Since sialorrhea is not so often a factor in the arteriosclerotic type, the drug is better administered post cibum. If the patient is especially sensitive to the drug, one 2 mg. tablet may be broken into pieces and administered over a period of several hours in the day If tremor is pronounced, it may be necessary to supplement the compound with small amounts of scopolamine, but seldom is it necessary to add belladonna for this age group. Use of atropine is contraindicated among these older patients. In some arteriosclerotic patients as much as 10 to 15 mg. of trihexyphenidyl may be necessary to provide the desired results; even this amount is well tolerated.

Physical therapy is a most valuable adjunct to the use of the compound. With his general sense of well-being improved by the drug, the patient becomes more amenable to the suggestion that he make the most of his improvement by accepting the additional help which can be derived from consistent and regular passive and active muscular reeducation. In fact, those patients who have profited most from the drug and who have maintained their level of improvement and continued to improve have as a general rule been those who were able and willing to supplement the medical regimen with various forms of physical therapy and exercises.

No special precautions are necessary in the administration of trihexyphenidyl. Our experience has been that it is an unusually mild drug, overdosage of which is almost impossible. It works its benefit without noxious side effects. It will be shown that the side reactions from the use of the compound are minimal, as compared with those of other drugs employed in the treatment of parkinsonism. The reactions seldom become disturbing to the patient, and they tend to wear off with continued use.

Though the usual dosage is between 6 to 10 mg. a day, 15 to 20 mg. is easily tolerated and doses of 30 to 50 mg. have not had deleterious effects. Complete blood cell counts in over 50 per cent of the 117 patients who were studied failed to reveal abnormal changes.

The presence of hypertension, cyanotic induration of the liver or renal disorders does not contraindicate the use of the drug, as the following case will illustrate:

CASE 1.—A. K., a man aged 59, had a tremor in his left arm when he was 50 years of age. The syndrome progressed rapidly; the left side became rigid, followed by involvement of the right extremities, neck and trunk. There was some drowsiness and sialorrhea. He spoke in a monotone. There was no diplopia, strabismus, weakness of convergence, nuclear palsy or oculogyria. The clinical picture was typical of idiopathic parkinsonism. Over a period of years he was maintained at first on small amounts of atropine and later on Bulgarian belladonna, rabellon,® scopolamine and vinobel.® He would remain stationary for long periods, with minor fluctuations in his condition. He was able to get about slowly, although he required help with dressing. On rare occasions he would smile, but for the most part he remained disgruntled, irritable and depressed.

At the age of 55 years there developed otosclerosis and gradual evidence of cerebral and generalized arteriosclerosis. Albumin and casts appeared in the urine, and his blood pressure rose to 200 mm. systolic. He began to complain of headache, vertigo and tinnitus. Edema of the ankles and legs developed, necessitating the recurrent administration of intravenous mercurial compounds. For the past four years he spent the winters in Florida.

In December 1947 belladonna and scopolamine were discontinued by a local physician, with the result that the patient became, as his family described it, "stone rigid" and was unable to chew, swallow or speak. He was then placed in a mental institution, where he was fed fluids intravenously, lost considerable weight and was considered moribund.

At this point he was placed on trihexyphenidyl therapy, 2 mg. three times a day. There was almost immediate improvement. He began to eat, talk and smile. He soon progressed to dressing and shaving himself. He gained weight and seemed a changed man. He was admitted to the Neurological Institute in April 1948 for a short period of observation and was found to be much improved over his condition of a year before. On examination, no pyramidal signs were found but there was a slight increase in the Achilles tendon reflex on the left. There was no drowsiness. His expression was good and his eyes alert; the bilateral tremor of the year previous, as well as rigidity with cogwheel movements, were all definitely diminished. In May 1948 Bulgarian belladonna was added to the medical regimen, and to date this dosage has not needed to be increased.

The most profound change in the man has been his mental improvement. Previously, because of tenseness and restlessness, he could not maintain any position for long and continually demanded that his legs and arms be stretched and his position changed. He berated his family for lack of sympathy and complained of constant pain and suffering throughout his body. He moaned, cried and was full of self pity.

Under trihexyphenidyl therapy his mental attitude became entirely different. He was able to sit quietly, calmly and fairly relaxed for hours at a time. He was again able to eat at table with his family and complained no longer of pains in muscles and joints. There has been no more groaning or crying.

The effect of the drug in this case was obviously not due to a reversal of the original pathologic conditions, but to a symptomatic change in the bodily and mental expression of the basic disease. Nevertheless, temporary and supportive as this treatment may be, it brings great relief to a patient suffering from a chronic progressive disease.

The distinguishing clinical features of the three essential types of parkinsonism, postencephalitic, idiopathic (formerly and erroneously called paralysis agitans) and arteriosclerotic, are so well differentiated and simple to recognize that they should be familiar to every one, especially since patients belonging to these groups differ in their response and reaction to drugs. A summary of the distribution of the salient symptoms characteristic of the three types of parkinsonism enables one to visualize the diagnostic criteria that characterize each group.

### THERAPEUTIC EFFECTS OF THE DRUG

There were 75 men and 42 women in the series under study, with the youngest among them 25 years of age and the oldest 78. Although it is a common observation that patients with parkinsonism tend to tire of any remedy and to engage in an endless search for something better, it was encouraging to find that 80 per cent of the patients who have been placed on trihexyphenidyl therapy have continued it month after month, without desire to change to another drug and without expressions of dissatisfaction.

In order to abstain from rough estimations of precise degrees of improvement, it was considered advisable to employ only the two categories of "improved" and "unimproved" to express our results. Patients were classed as improved if the symptoms were lessened to any appreciable degree or if the patient's comfort and well-being were bettered. If the patient derived no relief or expressed a desire to change to another medicament he was classified as unimproved. Since there were no patients actually retarded by the treatment, there was no basis for employing the designation "made worse."

Parkinsonism is a chronic progressive disease, and experience teaches that one is not justified in utilizing minute shades of change to record the results of treatment, such as near cure, remarkably improved, much improved, moderately improved and slightly improved. Besides, in many of the so-called "near cures," in which initial effects of the drug appear remarkable, improvement tends to lessen with time. Moreover, on discontinuation of the treatment all benefits cease. It is desirable, therefore, in reporting the value of any treatment in such chronic and long-continued illness, to refrain from overenthusiastic conclusions based on one small cross section of time. Therefore, although almost unbelievable improvement was obtained with the compound in many instances, it was considered desirable to classify even these patients under the unmodified designation of "improved."

It will be noted that 76.1 per cent of the patients treated with the drug were improved and 23.9 per cent unimproved.

Although the figures alone are most gratifying, they hardly serve to convey the full measure of benefits which patients derived from use of the drug. For this, we shall briefly cite some case histories that were not specially selected but taken from a small alphabetic list of patients receiving the compound.

Case 2.—B. G., a woman aged 55, had acute encephalitis in 1928. This was followed by slowly progressive rigidity, slight tremor and lethargy. In 1945 curare was tried at Duke University with little effect on the rigidity. She tolerated scopolamine and stramonium poorly and in August 1947 was started on trihexyphenidyl therapy. She moves more freely, drives her car, looks brighter, is less depressed, swallows more easily and has gained weight. Her improvement continues satisfactory ot date.

Case 3.—C. G., a man aged 34, noted the development of progressive stiffness and some tremor in the course of the last four years. There was no available history of a preceding acute illness. Examination revealed slight strabismus, weakness of ocular convergence and lethargy. He had been treated with various belladonna preparations. On trihexyphenidyl he has obtained improvement. He is more cheerful; the rigidity is less; his speech is clearer, and he is generally more alert and active.

Case 4.—L. G. is a man aged 47 whose postencephalitic parkinsonism symptoms started in 1932 and progressed to an advanced state of rigidity and tremor, torticollis, lethargy, sialorrhea and oculogyria. In 1943 he underwent cerebral surgery without improvement in his rigidity or tremor. In fact, the latter had become worse so rapidly that massive doses of scopolamine were necessary to afford the patient some temporary relief. In January 1948 trihexyphenidyl therapy was begun, and he gradually discontinued the use of all scopolamine. The tremor has lessened, and the oculogyric crises have ceased.

Case 5.—M. G., a man aged 62, had tremor and rigidity of three years' standing. He had been receiving the usual medicaments for this age group. In March 1948 he was placed on trihexyphenidyl therapy, and it has made him happier than all previous treatment measures. He eats and sleeps well; he walks easier, and the tremor is less.

Case 6.—R. G., a man aged 44, had encephalitis in 1918, followed by increasing rigidity, tremor and oculogyric crises. He had been under the care of the Matheson Commission for the study of encephalitis in 1929 and had received encephalitis vaccine and most of the other known forms of treatment. He was placed on trihexyphenidyl therapy in January 1948, with the result that he is more cheerful than he has been in years and has few oculogyric crises. The tremor is slightly less, and he moves easier.

Case 7.—R. G., a woman aged 63, had progressive tremor and rigidity of four years' standing. Scopolamine and belladonna produced dizziness, drowsiness and general weakness, so that she had discontinued all medicaments the previous year. In June 1948 she was given the new drug. She walks easier, feels better mentally and has little tremor.

Case 8.—S. G., a man aged 40, in 1939 noted the development of stiffness in the right arm. This was followed by tremor, increasing rigidity, sialorrhea, impaired speech, depression and thoughts of suicide. He has been receiving the compound for seven months, with little change in the physical symptoms, but his nervousness and tremor have subsided. He is calmer and more relaxed and partakes of a busy program of activities.

Although parkinsonism is a chronic progressive disease, it must not be assumed that the course is of necessity always rapidly or steadily downhill. There are patients who under suitable treatment remain stationary for as long as ten or fifteen years, as the following case illustrates:

Case 9.—G. K., a man aged 40, had an acute attack of encephalitis in 1929 at the age of 19, and shortly afterward there developed rigidity of the muscles of the neck and arms and periodic attacks of oculogyria. These became so frequent that he feared the loss of civil service employment. Early in the course of his illness scopolamine and stramonium had been tried and failed to bring any relief. On atropine, however, which he had been taking for the past twelve years, there was complete control of the oculogyric crises and a regain of freedom of bodily movement, with a lessening of spasticity. His improvement continued until 1947 when, despite increases in atropine dosage, the oculogyria and body rigidity returned in severe form, so that he was forced to give up employment. Trihexyphenidyl was prescribed in the Spring of 1948 and brought him some measure of relief. However, it did not materially alter the recent rapid progress of the symptoms. Parpanit® (diethylaminoethyl-1-phenylcyclopentane-1-carboxylate hydrochloride), diethazine hydrochloride (diparcol,® diethylaminoethyl-thiodiphenylamine) and other nerve preparations proved equally ineffectual.

The explanation for the period of twelve years in which the patient's disease remained in status quo is not attempted. Obviously, atropine could not be responsible for a reversal of pathologic processes in the interstitial nucleus and substantia nigra. It could, however, have modified the effects of the pathologic condition on the peripheral structures and exercised a stimulating action on the prefrontal cortex, so that the progress of the disease seemed to be stopped for a long time.

The reappearance of symptoms after an interval of twelve years may have been a sudden advance in pathologic changes or the result of increased tolerance of the body tissues to the drug, with loss of its long beneficial effect. Because it is the general experience that the effects of drugs do tend to decrease with use, the need for ever new and more effective medicaments is granted. In the long drawn out course of parkinsonism, patients regularly tire of one drug after another, so that it becomes necessary for the physician to have his armamentarium continually renewed. Also, one finds that some patients tolerate better one drug, others another. Atropine, for example, while a valuable medicament in many cases of postencephalitic parkinsonism, is unsafe in the older arteriosclerotic group, because of the hazard of precipitating glaucoma and other disturbing circulatory and visceral phenomena.

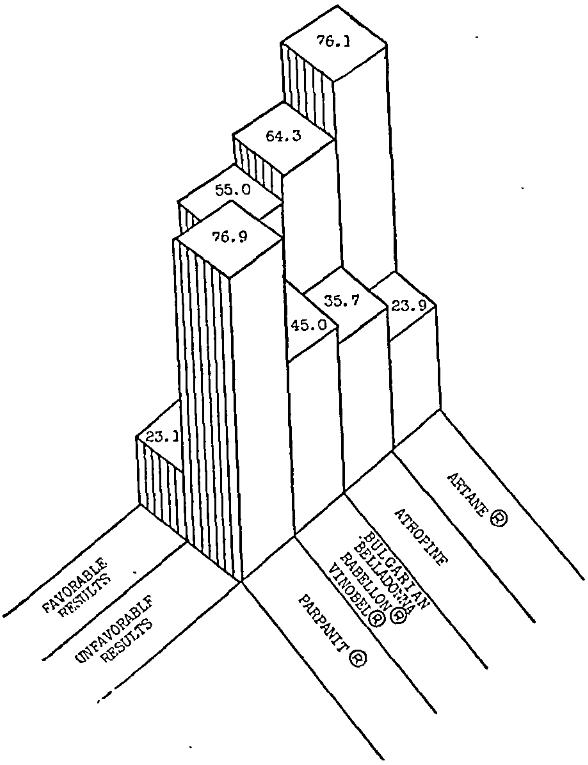

Chart 1.—Percentages of favorable and unfavorable results among different preparations employed in the treatment of parkinsonism.

Trihexyphenidyl, with its similarity to atropine but without the toxic side reactions of the latter, has proved a valuable adjunct in the treatment of arteriosclerotic parkinsonism and of the idiopathic variety. A favorable response to treatment has been observed more frequently among members of these two groups than among the postencephalitic patients. Chart 1 shows that the drug afforded as much symptomatic relief to sufferers with parkinsonism as did any other available drug.

In addition to the physical improvement, the mental stimulation which the compound affords has served to successfully counteract impatience, discouragement and depression, which are common byproducts of any chronic illness. Many patients receiving trihexyphenidyl were able to carry on with their work better and with more feeling of satisfaction, whether laborer, housewife or shopkeeper. The women found their household chores easier. Rigidity was improved, and tremor and oculogyria were either controlled or lessened. Even patients with advanced symptoms of twenty years' duration were helped greatly by being made more comfortable and able to assume some care of their persons, which previously had become the responsibility wholly of their families or caretakers. In this respect the drug is of more extensive value than atropine, which is of benefit to persons with early postencephalitic manifestations but far less helpful to those whose disease is of long standing.[11] Trihexyphenidyl, in contrast, proved almost as beneficial to postencephalitic patients with over ten years' duration of illness as to those with more recent symptoms (72 per cent; 75 per cent).

### UNTOWARD SIDE REACTIONS OF THE DRUG

Experience with the use of various drugs in the treatment of parkinsonism proves that patients react differently to any given drug, depending on the type, duration and degree of illness and the age, temperament, mental attitude and constitutional makeup of the patient. Thus, it is common observation that some patients disregard dryness of the mouth or try on their own to relieve it by simple means, while others complain so bitterly that it becomes an obstacle in the treatment.

Atropine, for example, which produces pronounced dryness as well as complete cycloplegia, is tolerated well by postencephalitic subjects, who generally suffer from appreciable sialorrhea. In fact, many of these patients measure the merits of any drug by its drying effect. The compound being studied produces minimal dryness (actually 12 per cent that of atropine), and only 14 of the 117 patients brought complaint on this account. Our experience has been that 90 per cent of all patients will manage to counteract or disregard a moderate amount of dryness and blurring of vision, if these are not accompanied with more disturbing types of reaction. For a summary of the mild as well as the disturbing types of reaction from this and other drugs, see chart 2.

Nausea and vomiting may be danger signals of idiosyncrasy or approaching toxicity, but they may be caused by psychic factors, food dyscrasias or gastrointestinal infection. Moreover, some patients will experiment on their own with larger quantities than prescribed or with additional drugs. Nevertheless,

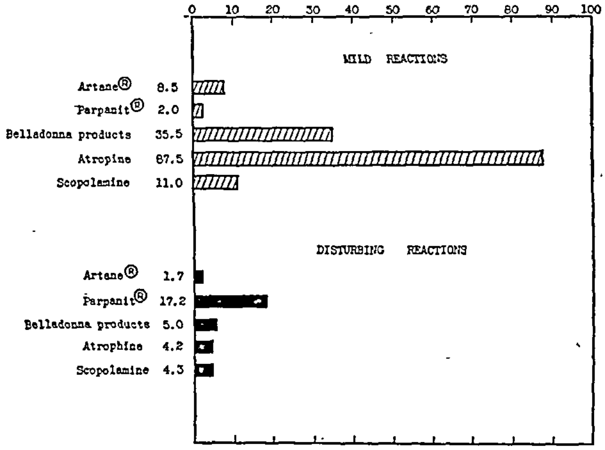

Chart 2.—Percentage of mild reactions (dryness of mouth and blurred vision) and disturbing reactions (dizziness, tachycardia, prostration, nausea and depression) among different drugs employed in the treatment of parkinsonism.

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[11] Doshay, L. J.: Graphic Rigidity Index, J. Mt. Sinai Hosp. 5: 451, 1938.

until another cause for the symptoms has been determined, nausea and vomiting should regularly be considered serious and administration of the drug should be discontinued, or the dosage reduced, until better tolerance is effected.

Atropine is the only one among the standard drugs which causes disturbing gastrointestinal symptoms. One case of vomiting was encountered among the 117 patients on trihexyphenidyl therapy, and this was of only moderate degree and occurred in a patient with psychiatric symptoms.

Giddiness or dizziness is usually the result of sudden circulatory disturbance or fall in blood pressure, in reaction to a drug. It is most apt to occur among arteriosclerotic persons. Although the patient often becomes greatly alarmed by the symptom, there is actually no danger. Nevertheless it is an indication for reduction of medication. By the same token, tachycardia is a distressing symptom to some patients. Since it is usually disregarded and unreported by the younger persons with postencephalitic disease, it appears with comparatively greater frequency among the older patients. Tachycardia did not appear among any of the subjects receiving artane.®

Adynamia, or prostration, is a reaction, caused by the curare-like effects of a drug, which is of disturbing proportion to older patients. It is often accompanied with a large psychic component, with the patient complaining that he felt "paralyzed" and powerless to move for days at a time. Mental depression is listed as a reaction among patients, when they become unduly agitated and depressed by one or more of the foregoing unpleasant side effects of the drug, or when they become discouraged by the failure of results from a given therapy.

Aside from these, it can be safely stated that all other reactions deriving from the use of the standard drugs are sufficiently mild to constitute no hazard to the health and welfare of the patient. However, since the aim of treatment in parkinsonism is not only to achieve physical improvement but to bring greater contentment and peace of mind to the patients, it will be obvious that the less unpleasant the reactions produced by the drug the better the cooperation and results. In this respect the compound stands out, because it is so mild and so slightly disturbing to the patients that they gladly turn to it, in order to escape the side reactions experienced after use of some of the other drugs.

Because it is well tolerated by young and old and is almost entirely devoid of toxic reactions, trihexyphenidyl has earned for itself an undisputed place in the armamentarium for the treatment of parkinsonian conditions.

Finally, it remains to be noted that, with due allowance for the disappointments in results with vaccines, plant extracts and surgical measures, synthetic drugs have at long last come to the fore to bring hope and promise to those who have parkinsonism. Trihexyphenidyl, a synthetic drug, has been proved in this study to be able to do as much and more for these patients, than all existing forms of treatment. On this basis rises the prospect that in the near future still more and better synthetic preparations will become available, which may ultimately spell complete relief from tremor, rigidity and oculogyria.

## SUMMARY

1. Trihexyphenidyl (artane,® 3-[1-piperidyl]-1-phenyl-1-cyclohexyl-1-propanol hydrochloride) is a new synthetic, antispasmodic drug for the treatment of parkinsonism.

2. Extensive pharmacologic tests with laboratory animals proved that action of the drug mildly resembles that of atropine in the control of sialorrhea, in cycloplegic effects and cerebral stimulation. However, it is entirely free of the toxic effects of atropine on the cardiac vagus, blood pressure and circulation.

3. The results of clinical studies in a series of 117 patients treated with this agent, establish its great usefulness against parkinsonian disorders and its remarkable freedom from disturbing side reactions. The investigation was conducted with 47 postencephalitic, 33 idiopathic and 37 arteriosclerotic cases of parkinsonism, for periods ranging from six months to two years.

4. The drug was found on all scores to be a valuable addition to the drugs already in use for the treatment of parkinsonism. Besides the peripheral effects, common to other drugs, it has an unusual cerebral-stimulating action, which is particularly effective in combating the depression and inertia prevalent among these patients. It is, moreover, so remarkably devoid of toxic reactions that it is safe for use by the young and the old, the ambulatory and the infirm, the hypertensive, the cardiac and the nephritic. It recommends itself as the drug of choice in arteriosclerotic and idiopathic cases, and should be regularly tried in postencephalitic cases in which atropine or other forms of medication prove disturbing or ineffectual. As with other drugs, this compound is more effective when its use is combined with physical therapy and exercises.

700 West 168th Street (32).

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# PAROXYSMAL COLD HEMOGLOBINURIA ASSOCIATED WITH DEMENTIA PARALYTICA

## Report of Treatment with Penicillin

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Paroxysmal cold hemoglobinuria is a syndrome characterized by the intravascular hemolysis of red blood cells and the excretion of hemoglobin in the urine following exposure to cold. It is one of the rarer complications of late syphilis. Less than 300 cases were found in the literature[1] up to 1932, and since that time only 40 additional cases have been reported.[2] In most instances this condition occurs in patients with latent syphilis, either congenital or acquired.

In this syndrome the intravascular hemolytic reaction is dependent on the presence in the serum or plasma of a hemolysin, which is absorbed by the red blood cells only at low temperatures. Complement is not necessary for this phase but is essential for hemo-

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[1] McCarthy, F. P., and Wilson, R., Jr.: Paroxysmal Hemoglobinuria: Report of Cases with Familial Findings, New England J. Med. **207:** 1019-1022 (Dec. 8) 1932.

[2] (*a*) Becker, R. M.: Paroxysmal Cold Hemoglobinurias, Arch. Int. Med. **81:** 630-648 (May) 1948. (*b*) Fleming, R. G., and Heffner, B. L.: Paroxysmal Cold Hemoglobinuria: Report of Two Cases, North Carolina M. J. **9:** 142-145 (March) 1948.

lysis to occur when the body is rewarmed (the Donath-Landsteiner reaction). The serum of patients with paroxysmal cold hemoglobinuria will hemolyze the red blood cells of other persons in the same blood group, but the erythrocytes of patients with this condition are not lysed by the serum of normal persons. This hemolysin is distinct from the Wassermann reacting substance (that is, reagin), and there is no correlation between the titer of the complement fixation or flocculation tests for syphilis and that of the hemolysin, except that both usually decrease following antisyphilitic therapy.

Evidence that this disease is caused by syphilis seems well established, but the mechanism remains obscure. The coexistence of active clinical syphilis and paroxysmal cold hemoglobinuria are uncommon. The finding of the Donath-Landsteiner hemolysin in patients with late syphilis has varied from less than 0.2 per cent to 20 per cent.[3] In a study by Donath and Landsteiner of 93 patients with dementia paralytica, only 1 patient was found to have paroxysmal cold hemoglobinuria but 6 others had a positive Donath-Landsteiner reaction without clinical manifestations of hemoglobinuria.[4]

The following case seems worthy of reporting because of the rather unusual association of dementia paralytica and paroxysmal cold hemoglobinuria. This is the third reported case of paroxysmal cold hemoglobinuria treated with penicillin.

## REPORT OF CASE

*History.*—J. T. E., a white mechanic aged 48, was admitted to Grady Memorial Hospital Oct. 22, 1948 for treatment of early dementia paralytica. At the age of 32 the patient had a penile lesion which was diagnosed as syphilis by his family physician, who treated him with seven or eight injections of an arsenical preparation. There was no subsequent treatment or serologic test for syphilis until the present admission. Approximately seven years before admission the patient noted the onset of severe shaking chills after exposure to cold. This was followed by fever, sweats, nausea, dizziness and the passage of dark urine. The patient attributed these symptoms to an old back injury. He also experienced blanching and numbness of his fingertips and ears but noted no evidence of urticaria. These attacks occurred every winter and were so severe that the patient was often too weak to work. Following these episodes, jaundice of several days' duration was frequently noted. The patient soon learned that he could not go outside in cold weather, sit in a draft, bathe in cool water or otherwise be exposed to cold without precipitating these symptoms. His last attack was in the winter of 1947-1948. He had had no attacks during the cold months preceding this hospitalization, because he feared to venture outside and had remained in the house during cold weather.

Approximately five months prior to admission the family of the patient noted that he had become nervous, weak and forgetful. These symptoms progressively increased before admission, and he was observed to have extreme emotional lability and an undue concern over trivialities. He experienced episodes of confusion and on several occasions awoke at night and was disoriented for a short period of time. The patient himself demonstrated signs of anxiety and felt that something was wrong, but he was unable to describe the cause of this fear. There was no history of headaches, paralyses or convulsions. The remainder of his past history was unremarkable. The wife of the patient denied having had syphilis, and her serologic test for the disease was negative.

*Physical Examination.*—On physical examination the blood pressure was 150 mm. of mercury systolic and 80 mm. diastolic; the temperature was 99 F., the pulse rate 110 and the respiratory rate 24. The patient was a well developed and moderately obese white man. He appeared to be neatly dressed but was extremely anxious, grunting and moving his hands and feet restlessly. The pupils were small but equal and reacted sluggishly to both light and accommodation. The ocular fundi appeared normal. Ears, nose and throat were normal. There was no enlargement of the superficial lymph nodes. The size of the heart appeared to be within normal limits, and there were no murmurs. The lungs were clear to percussion and auscultation. The abdomen was obese, and no organs or masses were palpable. The genitalia were normal. The reflexes were hypoactive but equal bilaterally. Pain, touch, position and vibratory sensations were normal. There were slight, continuous tremors of the hands, lips and tongue.

A mental status examination showed the patient to be slightly depressed, and quite concerned about his illness, without delusions or hallucinations. The patient was oriented as to place but confused as to the day of the week, the month and the year. There was some impairment of his objective memory for both recent and past events. His fund of knowledge was somewhat limited. He was able to repeat four digits, though slowly. Only the simplest type of calculation was possible. There was some slurring of the test phrases and his handwriting was tremulous.

*Laboratory Data.*—Laboratory examination on admission revealed 3,900,000 red blood cells per cubic millimeter, a hemoglobin level of 11 Gm. per hundred cubic centimeters, and a white blood cell count of 5,800 per cubic millimeter with a normal differential. His blood was type A, Rh positive. The sedimentation rate (Westergren) was 30 mm. in sixty minutes; the nonprotein nitrogen 47 mg., total serum protein 6.7 Gm., cholesterol 188 mg. and the serum bilirubin 0.2 mg., per hundred cubic centimeters. Urinalysis was normal. The urinary urobilinogen was within normal limits. Reaction to the serologic test for syphilis was positive with 10 Kahn units. Tests for cold agglutinins were negative. Examination of the spinal fluid revealed normal pressure and dynamics, 62 lymphocytes per cubic millimeter, 1 plus Pandy reaction, protein 56 mg. per hundred cubic centimeters, a 4 plus reaction to the Wassermann test with 0.0312 cc. of spinal fluid, and a mastic reaction of 443211. The red blood cells did not exhibit increased fragility. Ehrlich's test and a Mackenzie "rough" test (which is described later) were both positive. Since the patient showed hemoglobinemia with Ehrlich's test, a Rosenbach test was not considered advisable. Tests were not made for the presence of dermolysins. The Donath-Landsteiner test was positive with a 1:2.5 dilution of serum. An electrocardiogram and teleoroentgenogram of the chest were interpreted as normal.

*Treatment and Course.*—The patient was treated with 60,000 units of penicillin G in aqueous solution every three hours, intramuscularly, for a total of 4.8 million units. He exhibited a mild Herxheimer reaction in the first twenty-four hours after the onset of treatment, with a rise of temperature to 101.2 F. but without aggravation of clinical symptoms. The patient's hospital course was otherwise uneventful, and some clinical improvement was noted at the time of discharge from the hospital on Nov. 9, 1948.

Following hospitalization, the patient has been observed at monthly intervals up to the present. One month after discharge from the hospital he was cheerful and better oriented; he showed some return in memory and in his ability to perform simple arithmetical calculations. The patient had not had chills or episodes of hemoglobinuria, though he had been out in freezing weather on several occasions. Six months after treatment, the patient's mental status appeared to be entirely normal. His wife believed that he had become completely well. A spinal fluid examination revealed 3 lymphocytes per cubic millimeter, 32 mg. protein per hundred cubic centimeters, a positive Kolmer reaction with 0.1 cc. of fluid and a normal mastic test.

There had been no further manifestations of hemoglobinuria. Ehrlich's test was still positive six months following discharge from the hospital, but there was no clinical reaction following a Rosenbach test. The Donath-Landsteiner test had not significantly changed since his admission, being positive in a 1:1 dilution of serum. Definite hemolysis was still present with this concentration of serum, but the reaction required lower temperatures (4 to 10 C.). On admission of the patient the Donath-Landsteiner test had been positive at temperatures of 18 to 20 C.

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[3] Ross, J. F.: Hemoglobinemia and Hemoglobinurias, New England J. Med. **233**: 691 (Dec. 6) 1945.

[4] Mackenzie, G. M.: Paroxysmal Hemoglobinuria: A Review, Medicine **8**: 159-191 (May) 1929.

### COMMENT

This patient showed almost complete recovery from symptoms of paroxysmal cold hemoglobinuria and dementia paralytica within a short time following treatment with penicillin. The symptoms of hemoglobinuria had been present for seven years and were rather incapacitating, while mental changes had been noted for only about five months before treatment.

The clinical manifestations of paroxysmal cold hemoglobinuria vary in intensity but follow the same general pattern. Following exposure to cold, the patient soon experiences prodromal symptoms of malaise, muscular aches and pains, abdominal cramps, headaches, nausea and vomiting. Certain patients manifest vasomotor disturbances such as urticaria, fluctuating blood pressure or Raynaud's phenomenon. Shortly after exposure to cold, the patient experiences a shaking chill, the severity of which is dependent on the degree of hemolysis. The patient's temperature may rise to 102 or 104 F. If large numbers of red cells are hemolyzed the patient may be definitely jaundiced for several days. Attacks may leave the patient with weakness, lassitude and mild nausea. The liver and spleen are occasionally palpable during the attack.

One to four hours after chilling, the urine becomes dark red, wine or mahogany in color. It frequently contains albumin, casts and even a few red blood cells. Spectroscopic examination reveals the color to be due to oxyhemoglobin, methemoglobin and sometimes hematin. The red blood cell count and hemoglobin content may drop decidedly following an attack. An initial neutropenia occurs during the exposure to cold, followed by a leukocytosis in the chill phase. The blood serum is colored pink or red, and in severe cases the serum bilirubin level may be elevated. The serologic test for syphilis is almost always positive. If the patient has persistently negative tests for syphilis the diagnosis of paroxysmal cold hemoglobinuria should be questioned.

The majority of patients with paroxysmal cold hemoglobinuria usually manifest a positive response to Ehrlich's test. This test consists of binding the finger with a ligature and immersing it in ice water for a few minutes. After the finger is warmed, local hemoglobinemia can be demonstrated. This reaction is less hazardous than the Rosenbach test and is preferable in the investigation of patients with hemoglobinuria. The Rosenbach test consists of immersing the hands or feet in ice water for ten to twenty minutes. The resulting hemolysis may produce severe constitutional symptoms and has occasionally resulted in anuria. Repetition of the cold water test may cause sufficient depletion of the patient's complement that negative reactions are obtained.

The Mackenzie "rough" test consists of chilling a sample of the patient's blood in ice water. A positive test is denoted by hemolysis after the blood is rewarmed. In the Donath-Landsteiner test a mixture of the patient's red cells, varying dilutions of his serum and guinea pig complement is immersed in ice water and then rewarmed. Hemolysis of the patient's cells is noted in a positive test. Appropriate controls are necessary for the interpretation of both these tests.

Differentiation from other common types of hemoglobinuria is usually relatively simple. In the Marchiafava-Micheli syndrome the hemoglobinuria occurs only at night. March hemoglobinuria occurs only after considerable physical exertion, such as after forced marches by soldiers. The Donath-Landsteiner reaction is negative in both these conditions. Paroxysmal cold hemoglobinuria must also be differentiated from that caused by cold hemagglutinins. In this condition hemolysis occurs while the blood is immersed in the ice water, and rewarming is not necessary for hemolysis to occur. Stat's work indicates that a very high cold agglutinin titer of approximately 1:3,000 is necessary for this reaction.[5]

It has been noted that only a few patients with paroxysmal cold hemoglobinuria have clinical manifestations of syphilis. Of the 40 patients reported since 1932, only 1 had a manifest lesion (interstitial keratitis) at the same time as the hemoglobinuria. Following inadequate antisyphilitic therapy, several patients have shown improvement in their symptoms of hemoglobinuria but have later exhibited signs of neurosyphilis.[6]

Routine antisyphilitic treatment of patients with paroxysmal cold hemoglobinuria is usually efficacious in producing a clinical cure or in ameliorating the severity of the reaction. Only 2 cases have been reported treated with penicillin. One patient had a decrease in symptoms and a persistently positive Rosenbach test two months following treatment with 3.6 million units of penicillin.[7] The other patient had a clinical cure after receiving 5 million units of penicillin but continued to have moderate reactions to the cold water test six months after treatment.[2a]

Penicillin has also been administered to a patient with Raynaud's syndrome and syphilis who had a positive Donath-Landsteiner test but did not exhibit hemoglobinuria.[8] There was no clinical improvement two months after treatment.

Our patient has shown complete clinical recovery following administration of 4.8 million units of penicillin.

### SUMMARY

A patient with early dementia paralytica associated with paroxysmal cold hemoglobinuria is reported. Treatment with penicillin has produced good clinical results.

# MASS PENICILLIN PROPHYLAXIS

## An Experiment with Negative Results

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The great incidence of respiratory disease and the resultant loss of time from work or regular activities have led many investigators to seek a means to prevent this type of morbidity. We were first struck by the favorable reports of the prophylactic use of the sulfonamide drugs in both the army and the navy during

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5. Stats, D.: Cold Hemagglutination and Cold Hemolysis: Hemolysis Produced by Shaking Cold Agglutinated Erythrocytes, J. Clin. Investigation **24:** 33 (Jan.) 1945.

6. Cited by Becker.[2a]

7. Goldberg, L. C.: Treatment of Paroxysmal Cold Hemoglobinuria with Penicillin, Am. J. Syph., Gonor. & Ven. Dis. **31:** 361 (March) 1947.

8. Davis, J. P., and Rosenbaum, D.: Cold [illegible] with Raynaud's Syndrome, Ann. Int. Med. **30:** [illegible]

From the Departments of Public Health ar [illegible] Hospitals.

The penicillin used in this study was supplied by Lederle Laboratories Division of American Cyanamid Company.

Abraham Gans, Ph.B., helped to code and tabulate data on International Business Machine cards; Martha Eaton, A.B., Sc.M., assisted in the interpretation of statistical data.

the war,[1] even though later articles rather coolly emphasized the development of sulfonamide resistance by bacterial organisms.[2]

Through serving medically the members of a voluntary health insurance plan, we would have had the opportunity to try these drugs on a large civilian population and would have yielded to the temptation to do so, were it not for the reports of toxicity,[1a] and even of agranulocytosis and death,[1b] despite the administration of small daily doses. With the advent of penicillin there came the universal recognition of its relative harmlessness, and accordingly an important barrier was removed from initiation of a large scale prophylactic experiment on a civilian population.

Reports of the preventive value of penicillin, notably against rheumatic fever in children, have been favorable, though the groups of subjects were small. Lapin[3] reported on the oral administration of 50,000 units of penicillin twice a day to children aged 8 months to 10 years. He noted a 75 per cent decrease in febrile days in the group of 148 children receiving penicillin compared to their experience in the preceding year, and a 70 per cent decrease in febrile days compared to the results among 110 other children who served as controls. The control group received nothing, not even a placebo.

Maliner and Amsterdam[4] reported no recrudescences of rheumatic fever among 22 children with a rheumatic history on administration of penicillin troches three times a day during those months when upper respiratory infections were most prevalent, whereas there were 4 definite recurrences of rheumatic fever in the same number of controls. Burke[6] observed favorable results from penicillin prophylaxis in a study that included both children and adults.

As with the sulfonamide compounds, the question of bacterial resistance to penicillin has been raised. The subject has been discussed by Lapin[3] as well as Milzer and others.[7] Milzer believed that such resistance could be overcome by increasing the size of the prophylactic dose. Lapin found no evidence that resistance developed. Florey[8] has said, "Fortunately it appears to be much more difficult to acquire resistance to penicillin in vivo than in vitro . . ." It was hoped to investigate this aspect of the subject.

## METHOD OF STUDY

It was proposed to place a minimum of 1,000 persons on a regimen of orally administered penicillin and another control group of 1,000 on a placebo, daily for a period of a year. The intended dose of a 50,000 unit tablet of penicillin twice a day throughout that period of time for 1,000 persons implied the use of 730,000 tablets and an equal number of placebos. At prevailing minimum rates the penicillin alone would cost over $100,000. Nevertheless, the proposal was presented to Dr. Benjamin Carey of the Lederle Laboratory Division of the American Cyanamid Company, who promptly responded favorably.

Accordingly, a letter asking for volunteers was sent in August, September and October, 1947, to over fifteen thousand heads of families and individual subscribers representing upward of sixty thousand members of the Permanente Health Plan. The letter emphasized the importance of the proposed research and stated frankly that some who accepted the invitation would receive penicillin and others would receive something else "for comparative purposes." The study was limited to family members above 7 years of age.

The letter explained that a month's supply, or sixty tablets, would be given at one time and that those participating in the study would be expected to report to the hospital pharmacy once a month for a new supply. In addition, the participants would be asked to fill out a form at the start of the study and each month thereafter, answering a number of questions about their health. To increase the validity of reports the forms were printed questionnaires containing squares either to be checked for yes or no replies or to have numerical answers inserted. All information thus obtained was to be coded and punched on statistical cards. The research was to be essentially a large scale statistical study.

No attempt was to be made to distinguish between virus and bacterial infections. While the penicillin was not expected to prevent virus infections or the common cold, it seemed that the drug might prevent bacterial complications or sequelae. The letter to subscribers covered this point.

Exactly 2,937 persons accepted the invitation, and all were started on the study; 1,486 in the experimental group and 1,451 controls. Although the response was larger than anticipated, it was expected that a number would drop out, how many no one could predict. As a matter of fact, when the last tablets were dispensed on July 26, 1948, eleven months after the first tablets left the pharmacy window, there were only 631 persons still actively participating in the study; 295 in the experimental group and 336 controls. The falling off of subjects became fairly gradual and uniform until the last few months, when a more rapid decline set in. As the study progressed the smaller number of participants enabled us to increase the size of the dose of penicillin without necessitating the acquisition of more material.

The study produced 9,264 monthly reports. In other words, the records represented 9,264 patient months. The dispensing of penicillin versus placebo was determined at random; those health plan members whose record file number was an odd number received penicillin; those with an even number, the placebo. However, all the members of a family received the same tablets as the head of the family. This resulted in almost perfect penicillin-placebo distribution, 4,582 being in the experimental group and 4,682 being controls.

For best utilization of the penicillin, the subject was requested to take the first dose one-half hour before breakfast and the second dose one-half hour before the evening meal.[3] These and other instructions were carefully printed on the bottle label.

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[1] (*a*) Watson, R. F.; Schwentker, F. F.; Fetherston, J. E., and Rothbard, S.: Sulfadiazine Prophylaxis in an Epidemic of Scarlet Fever, J. A. M. A. **122:** 730-733 (July 10) 1943. Holbrook, W. P.: The Army Air Forces Rheumatic Fever Control Program, ibid. **126:** 84-87 (Sept. 9) 1944. (*b*) Coburn, A. F.: Prevention of Respirator Tract Bacterial Infections by Sulfadiazine Prophylaxis in United States Navy, ibid. **126:** 88-92 (Sept. 9) 1944. The Prevention of Respiratory Tract Bacterial Infections by Sulfadiazine Prophylaxis in the United States Navy, NAVMED 284, Bureau of Medicine and Surgery, United States Navy Department, Washington, D. C., 1944.

[2] Sulfadiazine Resistant Strains of Beta Hemolytic Streptococci, Epidemiology Unit Number 22, J. A. M. A. **129:** 921-926 (Dec. 1) 1945. Damrosch, D. S.: Chemoprophylaxis and Sulfonamide Resistant Streptococci, ibid. **130:** 124-128 (Jan. 19) 1946.

[3] Lapin, J. H.: Prophylaxis of Upper Respiratory Infections in Children Treated with Oral Penicillin, J. Pediat. **32:** 119-124 (Feb.) 1948.

[4] Maliner, M. M., and Amsterdam, S. D.: Oral Penicillin in the Prophylaxis of Recurrent Rheumatic Fever, J. Pediat. **31:** 658 (Dec.) 1947.

[5] Footnote deleted on proof.

[6] Burke, P. J.: Penicillin Prophylaxis in Acute Rheumatism, Lancet **1:** 255-256 (Feb. 15) 1947.

[7] Milzer, A.; Kohn, K., and MacLean, H.: Oral Prophylaxis of Rheumatic Fever with Penicillin; Resistant Hemolytic Streptocci, J. A. M. A. **136:** 536-538 (Feb. 21) 1948.

[8] Florey, H.: New Antibiotic Agents, J. A. M. A. **135:** 1047-1049 (Dec. 20) 1947.

The original form filled out by the volunteer requested such pertinent information as sex, age, race, occupation, previous history in respect to respiratory disease, experience in the past year in regard to number of respiratory infections or time lost from daily routine and past use of tobacco, vitamins, medicine and penicillin.

The monthly report form, which was completed when the month's supply of tablets was replenished, ascertained the subject's respiratory experience in the preceding month in respect to the incidence of infection in himself or members of his family, time lost from work or from regular activities, necessity of visiting a physician and number of days spent in a hospital, if any. Although we were primarily interested in respiratory disease, we also included a number of inquiries on nonrespiratory illness, which followed the general tenor of the foregoing questions.

One inquiry on the monthly report asked the number of tablets which the subject had neglected to take because of memory failure, inconvenience or other reason. If this number were large in the experimental group it might explain a negative result. However, the data thus obtained revealed that not over 4.4 per cent of the penicillin tablets were missed during the course of the study. It is unlikely that this small amount would have affected the outcome of the experiment.

RESULTS

The major results of the study were essentially negative in respect to both respiratory and nonrespiratory illness. In fact, it is striking how similar are the statistics for the penicillin and placebo groups. This has seemed so evident that as far as many of the data are concerned elaborate statistical analysis hardly appeared indicated. Yet, despite the negative results, the work revealed a number of interesting sidelights.

The first trial run of the punch cards was made after the study was in effect approximately four months. Since it was noted that there was no appreciable difference between experimental and control groups, it was decided to double the dose; each volunteer was therefore asked to take two of the 50,000 unit tablets twice a day. After the double dose had been maintained for three months the results again proved to be negative. The dose was then quadrupled, giving each subject 400,000 units of penicillin daily. Again after four months the results were still negative. The number of patient months on single, double and quadrupled doses was fairly well distributed; namely, 3,582, 3,685 and 1,997 (or 38.7 per cent, 39.8 per cent and 21.5 per cent of the total), respectively. The results are shown in table 1.

The data in this table will be reviewed briefly. In a comparison of experimental and control groups, actual figures would have little meaning unless related to the number of persons in each group. This relationship is expressed as a ratio and calculated in percentage. In the table the percentages which favor, however slightly, the users of penicillin are in bold face type, as are the corresponding figures from which the percentages are derived.

In the left half of the table there is an isolated instance of a statistically significant difference favoring the experimental group. This occurs in respect to the time lost from work or activity due to respiratory illness when the subjects were on the double dose. The number of days lost and corresponding percentages are 969, or 53.6 per cent, for the penicillin group and 1,184, or 63.2 per cent, for the control group. However, the preceding columns reveal that the number of persons involved was 229 for the penicillin group and 243 for the placebo group; the respective percentages being 12.7 and 12.9, or essentially the same figure. So the difference in days lost cannot be explained on the basis of the number of persons. As a matter of fact, it can be shown that the difference in lost time was actually due to more serious and protracted illness among a few persons in the control group, a possibly fortuitous circumstance.

To the right of the table the users of penicillin on single and quadruple doses are favored in respect to the number of days lost from work or activity and in respect to the number of days hospitalized (nonrespiratory cause), but those on double dose are not so favored. Since there is no logical reason why single and quadruple doses should have an effect which could not be obtained by a double or intermediate dose, the results must be considered fortuitous.

Repeated analyses have been made of the statistical cards, separating out those who reported for the preceding twelve months a varying incidence of respiratory infection or varying days of time lost from respiratory cause. Again results were negative. The statistical cards have been studied in respect to use of tobacco, to mention another breakdown, and nothing significant was found.

TABLE 1.—*Data Concerning Respiratory and Nonrespiratory Illness for Penicillin and Control Groups on Single Double and Quadruple Doses*

| | | | Respiratory Cause | | | | | | | | | | | | | | Nonrespiratory Cause | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total No. of Persons Reporting | Persons Reporting Infections | | Time Lost from Work or Activity | | | | Persons Who Consulted Physicians | | Hospitalization | | | | Persons Reporting Family Respiratory Infections | | Persons Reporting Illness | | Time Lost from Work or Activity | | | | Hospitalization | | | | | |
| | | | | | Persons | | Days | | | | Persons | | Days | | | | | | Persons | | Days | | Persons | | Days | | | |
| Dosage | Group | | No | %* | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | | |
| Single | Penicillin........ | 1,779 | 652 | 36.6 | **194** | **10.9** | **642** | **36.1** | 89 | 5.0 | 14 | 0.8 | 43 | 2.4 | 748 | 42.0 | 224 | 12.6 | 103 | 5.8 | **359** | **20.2** | **10** | **0.6** | **57** | **3.2** | | |
| (Sept. to Dec.) | Control......... | 1,803 | 643 | 35.7 | **203** | **11.3** | **681** | **37.7** | 78 | 4.3 | 6 | 0.3 | 19 | 1.1 | 731 | 40.5 | 156 | 8.7 | 97 | 5.4 | **498** | **27.7** | **15** | **0.8** | **78** | **4.3** | | |
| Double | Penicillin........ | 1,808 | 633 | 35.0 | **229** | **12.7** | **969** | **53.6** | 104 | 5.8 | **4** | **0.2** | **9** | **0.5** | 824 | 45.6 | 186 | 10.3 | 98 | 5.4 | 718 | 39.7 | 29 | 1.6 | 192 | 10.6 | | |
| (Jan. to March) | Control......... | 1,877 | 622 | 33.2 | **243** | **12.9** | **1,184** | **63.2** | 108 | 5.8 | **8** | **0.4** | **25** | **1.3** | 754 | 40.1 | 157 | 8.4 | 74 | 3.9 | 335 | 17.9 | 16 | 0.9 | 145 | 7.7 | | |
| Quadruple | Penicillin........ | 995 | 230 | 23.1 | 67 | 6.7 | **234** | **23.5** | 38 | 3.8 | .. | ... | .. | ... | 312 | 31.4 | 69 | 6.9 | 32 | 3.2 | **191** | **19.2** | **10** | **1.0** | **55** | **5.5** | | |
| (April to July) | Control......... | 1,002 | 201 | 20.1 | 64 | 6.4 | **255** | **25.5** | 38 | 3.8 | 1 | 0.1 | 1 | 0.1 | 246 | 24.6 | 59 | 5.9 | 31 | 3.1 | **410** | **41.0** | **11** | **1.1** | **66** | **6.6** | | |

* The percentage expresses the ratio that the preceding figure bears to the total number of reporting subjects in the corresponding group (column at extreme left). Percentages favoring the penicillin group are in bold face type; percentages favoring the control group, in light face. The percentage figure and the figure preceding it are set in the same type.

In view of previous reports of successful prophylaxis in children, the records were studied by sex and age in decades. The observations are reported in table 2. Only a few scattered figures favoring the penicillin group are statistically significant, but there is no consistent, statistically significant advantage for the penicillin users of either sex in any age group.

## TOXICITY

We were impressed by the relatively large number of mildly or moderately severe toxic reactions to oral penicillin. There were no disastrous effects, however. Only 1 patient required brief hospitalization for a dermatitis.

The large number of reactions is in contrast to the experience of Lapin, who reported mild toxicity in only 3 of 148 children. According to most writers, the percentage of toxic reactions to oral penicillin is small and the reactions are mild. In this study the single dose screened out almost all the sensitive subjects, so that doubling or quadrupling the dose produced practically no additional toxic reactions other than mild digestive upset in which the quantity of tablets probably played a part. But the strange thing is that those receiving the placebo, a tablet of calcium carbonate of equal size, reported almost as much discomfort as did those receiving the penicillin.

Of course, in a study of this sort where subjects could drop out at will, there was no way of knowing the exact percentage of toxic reactions. In order to approximate the figure, self-addressed, prepaid postcards were sent to 1,500 of those who discontinued (750 on penicillin and an equal number on placebos). From these, 627 replies were received; 322 from experimental subjects and 305 from controls. The replies are analyzed in table 3.

It will be noted that 90 of those who received penicillin reported that "the tablets did not agree with them," most of the subjects indicating digestive or cutaneous disorders, or headaches. Sixty-four persons who received the calcium carbonate placebo signified similar subjective or objective complaints.

As to the percentage of reactions among the experimental subjects, it can be said that there was considerably upward of 6.1 per cent (90 of 1,486 persons receiving penicillin). The postcards reached only about

TABLE 2.—*Data Concerning Respiratory Illness for Penicillin and Control Groups According to Age and Sex*

| Ages | Males: Group | Total Number of Persons Reporting | Persons Reporting Infections No. | Persons Reporting Infections %* | Days Lost from Work or Activity No. | Days Lost from Work or Activity % | Persons Who Consulted Physician No. | Persons Who Consulted Physician % | Days Hospitalized No. | Days Hospitalized % | Persons Reporting Family Respiratory Infections No. | Persons Reporting Family Respiratory Infections % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 to 9 | Penicillin.................... | 141 | 36 | 25.6 | 93 | 66.0 | 10 | 7.1 | 1 | 0.7 | 71 | 50.4 |
| | Control.................... | 90 | 32 | 35.6 | 118 | 131.0 | 12 | 13 3 | .. | ... | 43 | 47.8 |
| 10 to 19 | Penicillin.................... | 187 | 75 | 40.1 | 173 | 92.5 | 17 | 9.1 | .. | ... | 90 | 48.1 |
| | Control.................... | 198 | 65 | 32.8 | 90 | 45.4 | 4 | 2.0 | 1 | 0.5 | 98 | 49.5 |
| 20 to 29 | Penicillin.................... | 247 | 90 | 36.4 | 50 | 20.3 | 7 | 2.8 | .. | ... | 112 | 45.4 |
| | Control.................... | 269 | 106 | 39.4 | 89 | 33.1 | 10 | 3.7 | .. | ... | 118 | 43.8 |
| 30 to 39 | Penicillin.................... | 606 | 221 | 36.4 | 206 | 34.0 | 27 | 4.5 | .. | ... | 292 | 48.2 |
| | Control.................... | 552 | 210 | 38.0 | 207 | 37.5 | 23 | 4.2 | 4 | 0.7 | 270 | 48.9 |
| 40 to 49 | Penicillin.................... | 463 | 156 | 33.7 | 159 | 34.4 | 14 | 3.0 | 10 | 2.2 | 193 | 41.7 |
| | Control.................... | 632 | 191 | 30.2 | 195 | 30.9 | 37 | 5.9 | 3 | 0.5 | 215 | 34.0 |
| 50 to 59 | Penicillin.................... | 531 | 145 | 27.3 | 144 | 27.1 | 30 | 5.7 | 28 | 5.3 | 124 | 23.4 |
| | Control.................... | 567 | 134 | 23.6 | 199 | 35.1 | 25 | 4.4 | 26 | 4.6 | 119 | 21.0 |
| 60 to 69 | Penicillin.................... | 248 | 60 | 24.2 | 49 | 19.8 | 11 | 4.4 | .. | ... | 52 | 21.0 |
| | Control.................... | 288 | 69 | 23.9 | 245 | 85.0 | 18 | 6.2 | 10 | 3.5 | 45 | 15.6 |
| All others † | Penicillin.................... | 67 | 16 | 23.9 | 6 | 9.0 | 2 | 3.0 | .. | ... | 15 | 22.4 |
| | Control.................... | 57 | 15 | 26.4 | 5 | 8.8 | 3 | 5.3 | .. | ... | 7 | 12.3 |
| | Females: Group | | | | | | | | | | | |
| 7 to 9 | Penicillin.................... | 117 | 47 | 40.1 | 137 | 117.0 | 7 | 6.0 | 5 | 4.3 | 65 | 55.6 |
| | Control.................... | 62 | 19 | 30.6 | 34 | 54.8 | 2 | 3.2 | .. | ... | 28 | 45.2 |
| 10 to 19 | Penicillin.................... | 192 | 75 | 39.0 | 72 | 37.5 | 6 | 3.1 | .. | ... | 131 | 68.2 |
| | Control.................... | 176 | 66 | 37.5 | 113 | 64.2 | 6 | 3.4 | .. | ... | 82 | 46.6 |
| 20 to 29 | Penicillin.................... | 388 | 135 | 34.8 | 127 | 32.7 | 15 | 3.9 | 5 | 1.3 | 195 | 50.2 |
| | Control.................... | 375 | 134 | 35.7 | 163 | 44.2 | 21 | 5.6 | .. | ... | 170 | 45.3 |
| 30 to 39 | Penicillin.................... | 506 | 188 | 37.1 | 234 | 46.2 | 31 | 6.1 | 3 | 0.6 | 239 | 47.2 |
| | Control.................... | 526 | 197 | 37.4 | 280 | 53.2 | 23 | 4.4 | 1 | 0.2 | 250 | 47.5 |
| 40 to 49 | Penicillin.................... | 434 | 130 | 30.0 | 210 | 48.4 | 22 | 5.1 | .. | ... | 161 | 37.1 |
| | Control.................... | 437 | 117 | 26.8 | 216 | 49.4 | 19 | 4.4 | .. | ... | 182 | 41.6 |
| 50 to 59 | Penicillin.................... | 344 | 106 | 30.8 | 160 | 46.5 | 28 | 8.1 | .. | ... | 118 | 34.3 |
| | Control.................... | 293 | 70 | 23.9 | 127 | 43.4 | 16 | 5.5 | .. | ... | 61 | 20.8 |
| 60 to 69 | Penicillin.................... | 89 | 31 | 34.8 | 17 | 19.1 | 2 | 2.2 | .. | ... | 22 | 24.8 |
| | Control.................... | 144 | 34 | 23.6 | 28 | 19.4 | 4 | 2.8 | .. | ... | 37 | 25.7 |
| All others † | Penicillin.................... | 22 | 4 | 18.2 | 8 | 36.4 | 2 | 9.1 | .. | ... | 4 | 18.2 |
| | Control.................... | 16 | 7 | 43.7 | 8 | 50.0 | 1 | 6.3 | .. | ... | 6 | 37.5 |

* The percentage expresses the ratio that the preceding figure bears to the total number of reporting subjects in the corresponding group (column at extreme left). Percentages favoring the penicillin group are in bold face type; percentages favoring the control group, in light face. The percentage figure and the figure preceding it are set in the same type.

† Including nonidentified

five-eighths of the penicillin-taking subjects who dropped out; assuming that there was the same proportion of reactions in those who were not polled, the figure would be increased to 9.7 per cent, yet this figure takes no account of additional persons with untoward reactions who did not reply to the postal inquiry.

There were reasons other than unpleasant reactions which caused persons to drop out, such as the inconvenience of getting to the hospital (142 on penicillin, 123 on placebo). Sixty on penicillin and 83 on the placebo said they ceased to cooperate in the study because they experienced no benefit. Only 6 on the placebo admitted frankly that they discontinued because they suspected that they were getting the placebo.

Table 3.—*Reasons for Dropping Out of Study*

Analysis of Replies from 322 Experimental Subjects and 305 Controls

| | Number Reporting | | |
|---|---|---|---|
| Type of Reaction | Penicillin Group | Control Group | Total |
| *Indigestion* | 40 | 29 | 69 |
| Skin | 27 | 10 | 37 |
| Headache | 18 | 8 | 26 |
| Sneezing, stuffy nose | 1 | 4 | 5 |
| Backache | 0 | 2 | 2 |
| Dizziness | 0 | 2 | 2 |
| Malaise | 0 | 2 | 2 |
| Loss in weight | 0 | 2 | 2 |
| Faster breathing | 0 | 2 | 2 |
| Rectal trouble, piles | 0 | 2 | 2 |
| Pain in Chest | 1 | 0 | 1 |
| Cough | 0 | 1 | 1 |
| Pain in heart | 1 | 0 | 1 |
| Nervousness | 1 | 0 | 1 |
| Weakness | 1 | 0 | 1 |
| Total | 90 | 64 | 154 |
| Other Reasons for Dropping Out | | | |
| Inconvenience | 142 | 123 | 265 |
| Received no help | 60 | 83 | 143 |
| Not stated | 35 | 52 | 87 |
| Medical or surgical disability | 10 | 8 | 18 |
| Might acquire resistance | 8 | 4 | 12 |
| Discontinued membership in Health Plan | 3 | 9 | 12 |
| Pregnancy | 6 | 3 | 9 |
| Doctor's request | 2 | 6 | 8 |
| Misunderstood routine | 4 | 3 | 7 |
| Suspected tablets were placebos | 0 | 6 | 6 |
| Couldn't swallow tablets | 4 | 1 | 5 |
| Miscellaneous | 2 | 1 | 3 |
| Total | 276 | 299 | 575 |

Eight discontinued the penicillin and 4 the placebo because they had read that they might acquire resistance to penicillin. Other reasons included pregnancy and difficulty in swallowing the tablets. One man quit because he was gaining weight, the calcium carbonate of the placebo evidently helping his peptic ulcer.

## COMMENTS

While many mildly disagreeable reactions to the tablets were thus recorded, it is interesting to note that many glowing reports of subjective benefits were reported, despite the negative results of the study. And there were almost as many enthusiasts in the control group as in the experimental group. This seems to substantiate the well known fact that persons may at times react favorably to a situation in which they are merely shown attention; for example, the kind of special attention that made them a part of a seemingly important mass penicillin experiment.

Subjects still come to the hospital requesting an opportunity to purchase penicillin for prophylactic use, but the effort is made to discourage them on the basis of actual results of the study and the cost of the antibiotic. Likewise, some of these demands for continued medication come from those who received the placebo. Thus, this study emphasizes the value of having a large number of subjects on a controlled program before arriving at favorable conclusions, and this is particularly true where reliance would have to be made on subjective improvement alone.

While it was not the intention of the study to make chemical or bacterial analyses, blood levels of penicillin were taken in 6 subjects who ingested two tablets about a half hour before breakfast. These levels, taken an hour after the meal, varied from 0.15 to 0.31 units, which are considered to be effective doses.[3]

It would have been interesting to determine whether the taking of penicillin tablets possibly prevented a gonococcic infection. No one taking either penicillin tablets or placebos reported to the hospital or clinic with such an infection. A patient on penicillin was hospitalized with a tubo-ovarian abscess, but the organism was Escherichia coli. This fact is interesting because, as far as is known, the organism is not affected by penicillin. In this case smears and cultures revealed no gonococci. During the course of the study 22 cases of gonorrhea were observed among health plan members not on the study, but obviously no conclusion can be drawn from this limited observation.

Finally, because of the references in the literature to acquired resistance to penicillin, already commented on, a review was made of the hospital records of all persons on the study who required hospitalization at the Permanente Hospitals and who received therapeutic doses of penicillin for their primary illness or for associated infection such as a complicating pneumonia. There were 8 patients in this group. Two of them, 1 with bronchogenic carcinoma and the other with phosphorus poisoning, died from the primary illness. Of the remaining 6 patients, 2 subjects had been on the study eight months (1 had asthmatic bronchitis and the other, the tubo-ovarian abscess previously mentioned); 1 subject had taken the penicillin tablets for seven months (another case of asthmatic bronchitis); 1 for six months (a case of secondarily infected second and third degree burns); 1 for five months (an incomplete abortion) and 1 for one month (a nonspecific prostatitis). Except for the E. coli in the case of tubo-ovarian abscess, the infecting organism was not identified. In no case, however, was there any evidence that the penicillin was less effective because of its previous prophylactic administration.

## SUMMARY

In conclusion, this study of mass penicillin prophylaxis, which involved 4,582 patient months in the experimental group and 4,682 patient months in the control group, discloses practically no difference for respiratory and nonrespiratory illness in respect to incidence of sickness, days lost from work or regular activities, days of hospitalization or number of persons who sought medical consultations. Respiratory infection in other members of the family was not affected.

There were many relatively mild reactions both to penicillin and to the placebo, besides many reports of subjective improvement experienced by both experimental and control subjects despite the negative results.

There was no evidence that subsequent therapeutic administration of penicillin was hampered by the previous taking of prophylactic doses.

# VALIDITY OF PNEUMOENCEPHALOGRAPHIC DIAGNOSIS

## A Study of Five Hundred Pneumoencephalograms in Children

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When Dandy[1] thirty years ago introduced the procedure of pneumoencephalography he offered neurologists a simple nonoperative method of visualizing certain of the structures of the brain during life. Gradually enthusiasm increased for the new method. Pancoast and Fay[2] believed that encephalography is indicated in any condition of the brain which might impair the cerebrospinal pathways. Davidoff and Dyke[3] stated: "Excluding individuals with increased intracranial pressure we believe that all patients with organic disease of the brain upon whom a diagnosis cannot definitely be made, whether it be with regard to the nature or location of the disease, should be subjected to encephalography." Pendergrass[4] expressed a similar opinion.

Just as slowly the enthusiasm waned, and neurologists began to doubt that the procedure was necessary in most cases. Thus Adson[5] questioned the value of frequent and promiscuous use of pneumoencephalography and doubted whether sufficient additional information was obtained in many cases to compensate the patient for the suffering he must endure.

In searching for an answer to the question we have reviewed 500 pneumoencephalographs of patients on our service and offer the following material.

### THE MATERIAL

*The Epilepsies.*—There were approximately 250 encephalographic studies performed on children with the clinical diagnosis of the convulsive state. In 55 per cent of these cases the encephalogram was interpreted as pathologic by the roentgenologist. However, in the great majority of these cases (49 per cent) the pathologic entity reported was bilateral or unilateral "cerebral atrophy or hypoplasia." (This diagnosis will be discussed later.) In only 6 per cent of the convulsive cases (in which suspicion of no other clinical entity such as neoplasm was seriously entertained) were more specific pathologic conditions found, such as porencephaly, agenesis of the corpus callosum, tuberous sclerosis, neoplasm, and internal hydrocephaly secondary to subdural hematoma.

In 8 per cent of the jacksonian type of convulsions pathologic lesions were reported on the encephalogram —and these pathologic entities were all "cerebral hypoplasia."

The clinical diagnosis and the treatment was unchanged by the encephalographic observations in 88 per cent of the patients with epilepsy. In 6 per cent of these persons with convulsive states, in whom the possibility of a brain tumor or subdural . had was entertained, the diagnosis was clarified ker, elimination of these possibilities. In another 6 pre the diagnoses were changed from the convulsive t to some of the diagnoses previously listed.

*Brain Tumors.*—A ventriculogram rather than encephalogram was made in the majority of childre who were suspected of cerebral tumor. Therefore the analysis of the following 29 cases does not represent the total material on the child neurology wards.

In 10 cases a tumor was visualized in the encephalogram in the area predetermined clinically. In 3 cases the localization of the tumor was changed from intraventricular neoplasm to craniopharyngioma, from intracranial neoplasm to optic chiasma glioma, from left frontal neoplasm to right frontal neoplasm.

The diagnoses were clarified and changed in 11 brain tumor suspects from internal hydrocephalus to craniopharyngioma in 1 case and to intraventricular cyst in another, from cerebellar neoplasm to cerebellar sclerosis, from subdural hematoma to idiopathic grand mal and cerebral hypoplasia and from brain tumor suspect to post-traumatic encephalopathy.

In 4 cases the encephalogram was misleading. It did not reveal a papilloma of the choroid plexus of the fourth ventricle in 1 case or papilloma of the choroid plexus of the left lateral ventricle in another case. These were discovered at operation in the former instance and at autopsy in the latter. In a third case a tumor of the brain stem was not visualized by the encephalogram. In a fourth case the encephalogram disclosed normal conditions in 1935 but, when repeated in 1939, revealed a tumor of the left temporal lobe.

The encephalogram is of great value in those suspected of having tumor of the brain. It usually verifies, localizes or rules out neoplasms. However, in 21 per cent of our cases in which a definite neoplasm existed the encephalogram did not reveal the tumor. A normal encephalogram does not rule out neoplasm.

*Post-Traumatic Syndrome.*—There were 35 encephalographic studies of children with clinical evidence of post-traumatic syndrome. In 55 per cent of these the encephalogram was interpreted as revealing pathologic conditions. However, "cerebral hypoplasia" was the condition most commonly found. Porencephaly was occasionally noted. On the whole the encephalogram was not revealing, although it did tend to rule out subdural hematoma.

*Postinfectious Group.*—Encephalograms were made on 40 children with the clinical diagnosis of postinfectious syndrome. Cerebral hypoplasia was reported in 50 per cent of the encephalograms, and other conditions such as toxoplasmic encephalitis, porencephaly and aplasia of the corpus callosum were reported in another 10 per cent of the cases. The encephalogram was not particularly helpful as a diagnostic aid in the postinfectious group.

*Congenital Anomalies and Miscellaneous Lesions.*—There were approximately 150 cases of congenital anomalies and miscellaneous lesions. In 65 per cent of these cases pathologic findings were reported by the roentgenologist. Although about 59 per cent of the cases displayed only cerebral hypoplasia, many interesting lesions were uncovered by the encephalogram in the other 6 per cent. The clinical diagnosis of hydrocephalus was changed in 1 case to agenesis of the corpus callosum and in a second to cerebral atrophy. Pro-

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[1] Dandy, W. E.: Roentgenography of the Brain After Injection of Air into the Spinal Canal, Ann. Surg. **70:** 397, 1919.

[2] Pancoast, H. K., and Fay, T.: Encephalography: Roentgenological and Clinical Considerations for Its Use, Am. J. Roentgenol. **21:** 421, 1929.

[3] Davidoff, L. M., and Dyke, C. G.: The Normal Encephalogram, Philadelphia, Lea & Febiger, 1937.

[4] Pendergrass, E. P.: The Value of and Indications for Encephalography and Ventriculography with Discussion of the Technic, S. Clin. North America **10:** 1461, 1930.

[5] Adson, A. W.: The Evaluation of Pneumoventriculography and Encephalography, Am. J. Roentgenol. **27:** 657, 1932.

s of cerebral and cerebellar atrophy, ydrocephalus and various structural visualized.

*ciency.*—The material was analyzed to correlation between the pneumoenceph- agnosis (particularly cerebral hypoplasia ) and the intelligence quotient. There were atients with a pneumoencephalographic diagnosis cerebral hypoplasia whose intelligence quotient varied from 20 to 149. Ten of these patients had an intelligence quotient over 80 and only 12 had an intelligence quotient below 50.

Table 1 shows the degree of correlation between the intelligence quotient and the pneumoencephalographic diagnosis of cerebral hypoplasia or atrophy.

It is interesting to note that in 22 of 34 severely defective children (intelligence quotient below 50), the encephalogram showed no evidence of cerebral hypoplasia or atrophy. However, hypoplasia was discovered more frequently in the severely defective children than in those with normal intelligence.

TABLE 1.—*Pneumoencephalographic Diagnosis*

| I. Q. | No. of Patients | Normal | Atrophy or Hypoplasia |
|---|---|---|---|
| Above 95 | 89 | 83 | 6 |
| 90 to 95 | 20 | 18 | 2 |
| 80 to 90 | 22 | 20 | 2 |
| 70 to 80 | 26 | 18 | 8 |
| 50 to 70 | 30 | 27 | 3 |
| 25 to 50 | 28 | 18 | 10 |
| Below 25 | 6 | 4 | 2 |

TABLE 2.—*Information Obtained from Encephalograms*

| Clinical Diagnosis | Number of Cases | Normal % | Abnormal,* % | Abnormal Other Than Cerebral Hypoplasia or Asymmetric Ventricles, % of Total |
|---|---|---|---|---|
| Convulsive state | 250 | .. | .. | .. |
| *Generalized* | ... | 45 | 55 | .. |
| Jacksonian | ... | 92 | 8 | None |
| Brain tumors | 29 | 33 | 67 | 52 |
| *Post-traumatic syndrome* | 35 | 45 | 55 | 5 |
| Postinfectious states | 40 | 40 | 60 | 10 |
| Congenital anomalies | 150 | 35 | 65 | 6 |
| Mental Retardation | | | | |
| Miscellaneous | | | | |

* The abnormal includes reports of cerebral hypoplasia.

The diagnosis of cerebral hypoplasia by the roentgenologist does not mean an impaired intelligence; nor does a completely normal encephalogram mean normal intelligence.

## COMMENT

Pneumoencephalography is a method of neurosurgical not neurologic diagnosis. If any therapeutic indications are revealed by it they are of necessity neurosurgical. Pneumoencephalography shows only (1) size, shape and position of ventricles; (2) size and shape of the basal cisterns, and (3) in some cases the pattern of the cerebral convolutions and sulci. The primary and enforcing indications are (*a*) signs of increased intracranial pressure without localizing signs—although in many of these cases ventriculography is the method of choice—and (*b*) increasing focal cerebral signs in the absence of increased intracranial pressure. In the epilepsies we believe that at least two of the following conditions should be present to justify pneumoencephalography: first, that the convulsions are always or predominantly one-sided and occur always on the same side; second, that there are positive neurologic signs on the side of the convulsions; third, that the electroencephalogram discloses abnormal signs only or predominantly on the side opposite the convulsions and the physical signs, and fourth, that the convulsions and other signs are increasing in frequency or severity, or both. Casamajor and others[6] compared the results of the foregoing three methods of clinical investigation in focal convulsive seizures in children and found that the clinical and electroencephalographic data bore closer relationship to each other and to the locality of the convulsions than did those from pneumoencephalography. The latter gave little help either for diagnosis or treatment in most cases.

We have cast doubt on the validity of the diagnosis of cerebral atrophy or hypoplasia from pneumoencephalographic films. Davidoff and Dyke[2] in their book "The Normal Encephalogram" admit that in all the cases which they reported there was ample evidence that suspicion as to the normality of the brains was justified. However, they checked their results with postmortem examinations, standard textbooks of anatomy and the study of 4,000 pneumoencephalograms. All this in their opinion gave them "a fairly accurate idea of the normal appearance of the structures." Their criteria of cerebral atrophy or hypoplasia were not any too definite. They judged atrophy or hypoplasia from the widening of the cerebral sulci and enlargement of the ventricles, although they gave no accurate measurements. Later these authors[7] supplied some more accurate figures as to the size of the normal ventricles, giving what they consider the normal limits of size. Apparently these measurements were taken on adult brains. Hence, it would be difficult to postulate the normal in children of different ages.

The pneumoencephalographic observations in mental deficiency are of especial interest. The data seem to prove conclusively that there is no correlation between the structure of the brain and intelligence in the vast majority of cases. There would appear to be no reason for pneumoencephalography in persons who are mentally defective unless there is definite evidence of a focal cerebral lesion. It is of little practical importance to know what sort of a brain, as shown by pneumoencephalography, a mentally defective person has; that is the brain with which he must go through life, and gas studies will not alter the prognosis or treatment in the slightest.

## CONCLUSIONS

1. Pneumoencephalography is a method of neurosurgical not neurologic diagnosis.

2. Pneumoencephalography is a necessary diagnostic technic when tumors of the brain are suspected.

3. Pneumoencephalography has little to offer in clarifying the diagnosis or indicating the treatment in most cases of epilepsy or the convulsive state.

4. There is no indication for pneumoencephalography in persons who are mentally defective unless there are also signs of growing focal lesions of the brain.

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[6] Casamajor, L.; Smith, J. R.; Constable, K., and Walter, C. W.: The Electroencephalogram in Children with Focal Convulsive Seizures, Arch. Neurol. & Psychiat. 45: 834 (May) 1941.

[7] Dyke, C. J., and Davidoff, L. M.: The Pneumoencephalographic Appearance of Hemangeoblastoma of the Cerebellum, Am. J. Roentgenol. 44: 1, 1940.

# Clinical Notes, Suggestions and New Instruments

## SERUM HEPATITIS IN A BLOOD BANK WORKER

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Numerous clinical and experimental studies within the past six years have demonstrated that virus hepatitis, including both the infectious and the homologous serum type, is transmissible to human beings by the parenteral injection of human serum. Apparently the only clinical differentiating characteristic of these two virus infections, when both are thus transmitted, is the shorter (twenty to forty days) incubation period in the case of the former and the longer (forty to one hundred and sixty days) incubation period in the latter. Neefe[1] has proposed the terminology "virus hepatitis I.H." and "virus hepatitis S.H." to differentiate the naturally occurring disease from the artificially transmitted homologous serum type.

Most commonly reported has been the accidental transmission of virus hepatitis by means of transfusions of whole blood, plasma and convalescent serum and injections of vaccines to which human serum has been added.[2] Less commonly encountered have been accidental transmission by use of unsterile syringes or needles, as in penicillin therapy[3] or in arsenical antisyphilitic therapy[4] or even during ordinary venipuncture for withdrawal of blood; the latter hazard was reported by Mendelssohn and Witts[5]; who noted that blood regurgitates back into a vein when the tourniquet is released. Finally, the use of the "multiple dose per syringe" technic for injections into large groups of persons has been a source for transmission of the virus, even when a sterile needle is used for each injection.[6] The probable mode for contaminating the material in the syringe, in this instance, is the aspiration of tiny amounts of infective serum (from the infected patient source) while testing to determine that the needle is not in a vein. Havens[7] has shown that parenteral inoculation of as little as 0.01 cc. of acute phase serum from a patient with infectious hepatitis is sufficient to cause the disease in a human volunteer.

In all these accidental transmissions of virus hepatitis the danger has been to the patient; i. e., to the recipient of the injection. The case herein presented is noteworthy because it strongly suggests a similar danger to the technician who performs the venipuncture or the injection.

### REPORT OF A CASE

*History.*—M. L., a 41 year old woman, was admitted to Beth Israel Hospital on Sept. 23, 1948, with jaundice of twenty-four hours' duration. She was a nurse who for the previous ten months had been employed in the blood bank of a large hospital in New York City. In her duties at the blood bank, she withdrew the needle from the donor's arm and the receiving bottle after the phlebotomy was completed. On many occasions she had pricked her hands and fingers with the needles. Four weeks before admission to the hospital she noticed a lack of energy and fatigue on arising in the morning. For three weeks she noticed the presence of a headache. Anorexia had been present for two weeks. She was a light cigaret smoker, using about 4 packages weekly; about two weeks before admission, she experienced an abrupt distaste for smoking. At that time her stools became clay colored and her urine dark red. Her urinary output diminished, as judged by decreased volume as well as decreased frequency. During these two weeks before her admission pain developed in the epigastrium, with eructations and nausea, and she vomited on one occasion. In the week prior to admission the upper part of her abdomen felt distended, as though her "skirt were too tight," and she lost 4 to 6 pounds (2 to 3 Kg.) in weight. She had no chills, but had a fever during this week, her temperature reaching 102 F. forty-eight hours before admission. On the day before admission she consulted a physician, who observed jaundice and an enlarged liver. Examination of the chemical content of the blood, performed the day prior to admission, revealed: normal total proteins, serum bilirubin 1.8 mg. per hundred cubic centimeters, cephalin flocculation 4 plus at 24 hours, thymol turbidity 23 units, alkaline phosphatase 6.6 units and prothrombin time 19 seconds (control, 14 seconds).

Her past history was noncontributory. She had never been previously jaundiced. She had had no blood or plasma transfusions. She had one child, aged 12. Nobody in the immediate family had been ill in recent months.

*Physical Examination.*—On admission her temperature was 98.6 F., pulse rate 80 per minute and respirations 20 per minute. Her blood pressure was 128 systolic and 82 diastolic. Her scleras were icteric. Her fauces was injected. There were no enlarged or tender lymph nodes. The heart and lungs were normal. The liver was enlarged 3 fingerbreadths below the costal margin, extending to the level of the umbilicus. It was smooth and tender to fist percussion, the tenderness being elicited immediately on contact with the fist. The spleen was not palpated. There was right costovertebral tenderness but no shoulder tenderness on palpation.

*Laboratory Data.*—Results of all pertinent blood cell counts, urine analyses and examinations of the chemical content of the blood are recorded in table 1. Roentgenographic examination of the abdomen on the eighth hospital day showed no evidence of gallstones or other abnormalities.

*Diagnosis.*—The admission diagnosis was virus hepatitis. Without a known incubation period, and in the absence of human transmission experiments, it was impossible to decide whether the I.H. virus or S.H. virus was involved. However, in view of the history of frequent needle pricking of the hands and fingers during the course of work in a blood bank and failure to elicit any other likely source of infection, it was felt that the virus hepatitis here was serum transmitted.

*Course.*—The patient was placed on a regimen of complete bed rest. Her diet was high in calories with moderately low amounts of fat, and she received supplementary B complex vitamins by mouth and vitamin K parenterally. Accessory lipotropic amino acids were not administered. Liver extract was not administered.

Her temperature rose to 100 F. on the second hospital day and thereafter remained normal. On the fourth hospital day a tender enlarged right posterior auricular lymph node was noted. Liver tenderness was no longer elicited by the fifth hospital day, and the liver had receded by then to 2 fingerbreadths below the costal margin. The patient noted increased urinary output at the beginning of the second week. Coincident with this, her appetite returned to normal and she had nearer normal general strength and sense of well-being. At the end of the second week, she was no longer jaundiced clinically and her serum bilirubin value fell to 0.83 mg. per hundred cubic centimeters (by method of Malloy and Evelyn, normal values 0.1 to 0.25 mg.) Her liver at this stage, still nontender, was palpable 1½ fingerbreadths below the costal margin. She was allowed out of bed at the end of four weeks and experienced no abdominal pains or other untoward symptoms. Her liver did not enlarge any further or become tender on this out of bed activity. Jaundice did not return. She was discharged on October 25, thirty-three days after admission. At the time of discharge results of the thymol

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[1] Neefe, J. R.: Recent Advances in the Knowledge of "Virus Hepatitis," M. Clin. North America **30:** 1407, 1946.

[2] Havens, W. P., Jr.: Infectious Hepatitis, Medicine **27:** 279, 1948.

[3] (*a*) Turner, R.: Hepatitis After Penicillin Injections, Lancet **1:** 108, 1946. (*b*) Howells, L., and Kerr, J. D. O.: Hepatitis After Penicillin Injections, Lancet **1:** 51, 1946. (*c*) Hughes, R. R.: Post-Penicillin Jaundice, Brit. M. J. **2:** 685, 1946.

[4] Truelove, S. C., and Hogben, L. A.: Documentary Study of Jaundice Associated with Syphilis Treatment and Blood Transfusion, Brit. J. Social Med. **1:** 18, 1947.

[5] Mendelssohn, K., and Witts, L. J.: Transmission of Infection During Withdrawal of Blood, Brit. M. J. **1:** 625, 1945.

[6] Howells and Kerr.[3b] Capps, R. B.; Sborov, V., and Scheifley, C. H.: A Syringe-Transmitted Epidemic of Infectious Hepatitis, J. A. M. A. **136:** 819 (March 20) 1948.

[7] Havens, W. P., Jr.: Period of Infectivity of Patients with Experimentally Introduced Infectious Hepatitis, J. Exper. Med. **83:** 251, 1946.

turbidity and cephalin flocculation tests were still abnormal, the result of the former, however, showing a diminution from a maximum of 37 to 13.5 units. The bilirubin was 0.21 mg. per hundred cubic centimeters. Her liver was nontender and palpable about 2 fingerbreadths below the costal margin.

Two months after discharge the patient was clinically well. Her appetite was good, and her taste for cigarets had returned. She tended to tire more readily than prior to her illness. Her liver was not tender, but still extended 2 fingerbreadths below the costal margin. The thymol turbidity was 5.8 units, the result of the cephalin flocculation test was 3 plus at 48 hours and the serum bilirubin 0.52 mg. per hundred cubic centimeters.

punctures, finger puncture or any type of needling of human beings to protect himself against accidental pricking, even when sterile instruments are assuredly employed.

The case introduces a new type of occupational hazard which merits compensation. The New York State Workmen's Compensation Board, after formal hearing of this case on Jan. 21, 1949, decided that it was the result of an accident and that a causal relationship had been established between the illness and the conditions of employment and made an award in favor of the patient. This represents, to our knowledge, the first such instance of the granting of a compensation award for a virus hepatitis infection.

TABLE 1.—*Pertinent Laboratory Data in the Case Reported*

| Date, 1948 | White Blood Cell Count | | | Urine | Thymol Turbidity, Units | Cephalin Flocculation | Alkaline Phosphatase-Units | Serum Proteins, Gm./100 Cc. | | | Serum Bilirubin, Mg./100 Cc. | Prothrombin Time, Seconds | Results of Sulfobromopthalein Test | Serum Cholesterol, Mg./100 Cc. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Differential | Abnormal Lymphocytes | | | | | Total | Albumin | Globulin | | | | Total | Esters |
| 9/22 | ..... | .............. | ........ | .......... | 23.0 | 24 hr.:<br>4+ | 6.6 | .... | .... | .... | 1.8 | 19 | .. | ... | ... |
| 9:23 | 6,900 | 33 polymorphonuclear cells<br>13 staff cells<br>6 eosinophils<br>2 basophils<br>24 lymphocytes<br>22 monocytes | Present | 1.010 amber<br>Albumin: trace<br>Bile: +<br>Urobilinogen: 1/160 | .... | ....... | ... | .... | .... | .... | ... | .. | .. | ... | ... |
| 9/27 | ..... | .............. | ........ | .......... | 37.7 | 24 hr.:<br>4+ | 4.7 | 7.32 | 3.77 | 3.55 | 2.5 | .. | .. | 256 | ... |
| 9/28 | ..... | .............. | ........ | 1.022<br>Albumin: 2+<br>Bile: 0<br>Urobilinogen: 1/80 | .... | ....... | ... | .... | .... | .... | ... | .. | .. | ... | ... |
| 9/29 | ..... | .............. | ........ | 1.014<br>Urobilinogen: 1/640 | .... | ....... | ... | .... | .... | .... | ... | .. | .. | ... | ... |
| 10/ 2 | 6,900 | 34 polymorphonuclear cells<br>13 staff cells<br>2 eosinophils<br>43 lymphocytes<br>8 monocytes | Absent | .......... | .... | ....... | ... | .... | .... | .... | ... | .. | .. | ... | ... |
| 10/ 6 | ..... | .............. | ........ | .......... | 22.1 | 24 hr.:<br>4+ | 4.0 | 7.20 | 5.05 | 2.15 | 0.83 | 14.8 | .. | 312 | 245 |
| 10/12 | ..... | .............. | ........ | .......... | 14.7 | 48 hr.:<br>3+ | 3.2 | 7.30 | 4.53 | 2.77 | 0.81 | .. | 12% Retained in 30 min. | 285 | 173 |
| 10/19 | ..... | .............. | ........ | .......... | 12.8 | 24 hr.:<br>3+<br>48 hr.:<br>3-4+ | ... | 7.80 | 5.03 | 2.77 | 0.52 | .. | .. | 273 | 167 |
| 10/25 | ..... | .............. | ........ | .......... | 13.5 | 24 hr.:<br>2+<br>48 hr.:<br>4+ | 3.8 | 7.70 | 5.06 | 2.64 | 0.21 | .. | 3% Retained in 30 min. | 342 | 238 |
| 11/ 4 | ..... | .............. | ........ | .......... | 7.3 | 24 hr.:<br>3-4+<br>48 hr.:<br>4+ | 2.8 | 6.02 | 3.93 | 2.09 | 0.99 | .. | .. | 271 | 160 |
| 11/11 | ..... | .............. | ........ | .......... | 9.2 | 48 hr.:<br>4+ | 4.7 | .... | .... | .... | 0.12 | .. | .. | 278 | 150 |
| 12/21 | ..... | .............. | ........ | .......... | 5.8 | 24 hr.:<br>2+<br>48 hr.:<br>3+ | ... | .... | .... | .... | 0.52 | .. | .. | 306 | 213 |

## COMMENT

The history of multiple needle pricks on hand and fingers sustained by this patient in the course of her duties at the blood bank persuades us to conclude that this was the mode of her infection. Admittedly, we cannot be absolutely certain that she had not contracted sporadic infectious hepatitis by other than parenteral means, but we think that this is unlikely in view of the highly suggestive history. However, we make no attempt to define the virus type involved as of the I.H. or S.H. variety, since we are in no position to decide the absolute incubation period and since both the virus types may be transmitted parenterally.[8]

The hazard which this case illustrates has wide applicability. It points to the obvious necessity for caution on the part of a physician or technician who engages in phlebotomies, veni-

This case provided us with the opportunity to study the sheep cell agglutination reactions in virus hepatitis, as part of a larger study stimulated by the clinical and hematologic similarities between virus hepatitis and infectious mononucleosis. The method employed for the test follows that of Davidsohn,[9] with final volumes totaling 0.35 cc., the tubes standing at room temperature for two hours and read immediately thereafter and titers expressed as dilutions prior to the addition of the 2 per cent sheep cell suspension. The results, including absorption studies with boiled guinea pig kidney, boiled ox erythrocytes and human liver, are detailed in table 2. The human liver antigen absorption study was prompted by the recent report by Eaton, Murphy and Hanford[10] of consistent absorptions with this antigen in acute hepatitis. Our results do indicate an elevated presumptive titer (1:320) early in the illness and a prompt fall to 1:80 within the next week. The absorption with boiled guinea pig kidney was complete at all stages of the illness, and the boiled ox erythrocytes consistently showed incomplete absorptions. Therefore, the heterogenetic antibody acted here like the normal Forssman antigen and could be differentiated from that characterizing infectious mononucleosis. The human liver tests, employing both boiled and unboiled liver antigen, reflected little or no absorption of the antibody.

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[8] Neefe.[1] Havens.[2]

[9] Davidsohn, I.: Test for Infectious Mononucleosis, Am. J. Clin. Path. (Tech. Supp.) **2:** 56, 1938.

[10] Eaton, M. D.; Murphy, W. D., and Hanford, V. L.: Heterogenetic Antibodies in Acute Hepatitis, J. Exper. Med. **79:** 539, 1944.

Table 2.—*Heterophil Antibody Absorption Studies in the Case Reported*

| | | Titer Following Absorption By | | |
|---|---|---|---|---|
| Date (1948) | Sheep Cell Agglutination Titer | Guinea Pig Kidney | Ox Cells | Human Liver |
| 9/22 | 1:320 | 0 | 1:80 | 1:160* |
| 9/27 | 1:80 | 0 | 1:20 | Hemolysis † |
| 10/ 6 | 1:80 | 0 | 1:40 | 1:80* |
| 10/19 | 1:80 | 0 | 1:40 | Hemolysis † |
| 12/21 | 1:80 | 0 | 1:40 | 1:80*<br>1:80† |

* Boiled. † Unboiled.

## SUMMARY

A case of serum-transmitted virus hepatitis in a 41 year old woman blood bank worker is reported. The mode of transmission was probably the accidental pricking of her hands and fingers during the withdrawal of needles from donors' arms and from receiving bottles after phlebotomies were completed. The hazard to other than the recipient of human blood products is emphasized. The physician and technician are cautioned against accidental self inoculation with the hepatitis virus by pricking of the skin while performing phlebotomies, venipunctures or injections in human beings. This case represents the first known instance in which a compensation award was granted for a virus hepatitis and introduces a new type of compensable occupational hazard. A heterogenetic antibody with the absorption characteristics of a Forssman antibody is identified in the serum of this patient.

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# RADIODERMATITIS OF THE LIP AFTER EXPOSURE TO ARC WELDING

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Control of the hazards of industry is the constant concern of the industrial surgeon. The early diagnosis of chronic lesions of the lip also commands attention, because cancer of the lip is frequently observed. In the 2 cases herein described there is a similar history of exposure to arc welding with the resultant formation of typical lesions of the lip. Since this condition has not been reported and has been an industrial hazard, it seems appropriate to record these cases.

## REPORT OF CASES

Case 1.—D. J. E., a sergeant aged 31, entered Fort Monmouth Station Hospital on May 18, 1948, because of a lesion of the lower lip on the left side. The condition had been noted by two medical officers, who advised biopsy.

The patient had noted a "scab" on the left side of his lower lip since November 1945. A crust about 3 mm. in diameter would form; this became hard and leathery on the third day and "looked dirty." The center then became depressed, with the edges frayed and projecting; at this time it would catch and bleed. By the end of the day it would fall off, leaving a hollow place surrounded with a white ring. Then the crust would commence to reform, and the cycle would be completed again by the fifth day. In the beginning the patient thought that the condition was a cold sore or came from a "bad stomach." Later he became concerned about the lesion.

It was noted that he had worked from September 1941 to March 1945 in shipyard construction as a shipfitter. His duties were to read blueprints while working among arc welders who were assembling ballast tanks. The welders protected their eyes and face by wearing hoods; this patient's protection consisted only of goggles for his eyes.

Past history related an operation for hernia in 1938 and an attack of urinary calculi in 1944. It was also noted that this patient had occasional dyspepsia. In the past, while a civilian, the patient had smoked as much as two and one-half packs of cigarets a day.

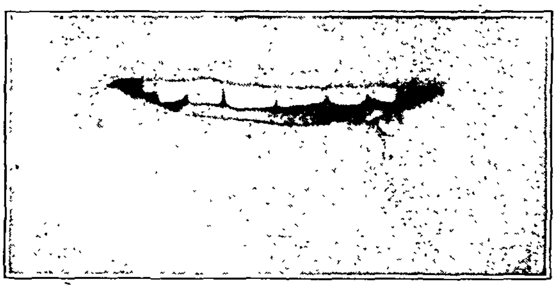
Fig. 1 (case 1).—Fissured, thickened lower lip three weeks after excision of the lesion.

Examination revealed an adult who looked older than his stated age of 31. His complexion was ruddy, his lower lip displaying a lesion about 1 cm. from the commissure and about 3 mm. in diameter. The lesion was square, grayish brown and thicker than the rest of the lip. The entire lip seemed pallid and thickened, with distinct sharp creases in the membrane which ran radially from the vermilion border inward. Nutritional lesion and leukoplakia were considered. While the troublesome crust seemed benign, it was considered necessary to perform a biopsy in order to settle the diagnosis.

With the patient under local anesthesia a triangle of the lip was excised which removed the lesion. The wound was sewed up in three layers, mucous membrane, muscle and skin. The wound healed well without incident, and all sutures were removed by the fifth day. The patient made an uneventful recovery.

The pathologist reported that the epidermis showed thinning of the prickle cell layer, absence of rete pegs and slight hyperkeratosis. Below the epidermis the upper corium revealed basophilic degeneration of connective tissue and destruction of elastic fibers. Foci of lymphocytes were found throughout the corium. Small dilated capillaries were increased in number. The epithelium of the mucous membrane revealed marked hyperkeratosis. There were areas of parakeratosis. The granular cell layer was thickened. There was moderate acanthosis, but the rete pegs were flattened so that they lay in a flattened plexiform arrangement. Numerous small capillaries and vascular spaces which were present gave the area a telangiectoid appearance. Surplus epithelium, elastosis, basophilic degeneration of connective tissue and telangiectasia gave this lesion the appearance of radiodermatitis. The arc welders' light was considered a source of energy sufficient to have caused this lesion.

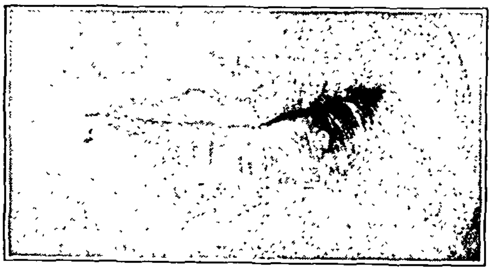
Fig. 2 (case 2).—Lesion and fissured lip before excision.

Case 2.—B. L. M., a private aged 25, was admitted to the hospital on Aug. 17, 1948, complaining of an annoying lesion on the left side of his lower lip. There was no pain, itching or burning, but constant irritation caused him to bite his lip. About six weeks before admission he had come to the surgical clinic complaining of the crust. The lesion was electrodesiccated, which gave him relief for a time after it healed. However, the condition recurred and he entered the hospital for excision of the lesion.

This patient had worked in his father's welding shop from the time he was 12 until he was 22 years of age. He was a part time helper and was "in and out of the shop all the time." There was a history of venereal warts for "the past two years." He had also been "bothered lately by plantar warts." He smoked one and one-half packages of cigarets a day and occasionally had shortness of breath; there was no history of heart trouble.

In 1934 a "wartlike growth" appeared near the right side of the lower lip and grew to the size of a match head, forming a crust in the course of two months. This lesion had been excised; it healed leaving a tiny scar.

On examination the lip was thickened, the vermilion border indistinct and the mucous membrane pallid. There were many vertical creases, especially near the corners and more pronounced on the felt. An irregular grayish yellow crust 4 mm. in diameter lay 1 cm. from the lateral commissure.

On August 18 the lesion was excised with the patient under local anesthesia; the wound was repaired in three layers. Healing occurred without event; sutures were removed by the fifth day.

The pathologist reported "radiodermatitis, a lesion that could have been caused by radiation exposure to roentgen ray, ultraviolet rays, excessive sunlight or arc welding."

### COMMENT

These cases are reported because they show the effect of an industrial hazard on the lip to cause a typical lesion, possibly precancerous. The lesion in both cases was on the lower lip.

## CUTANEOUS BURNS DUE TO FLUORESCENT LIGHT

R. RALPH BRESLER, M.D.[*]
Philadelphia

Fluorescent lighting has hitherto been considered entirely harmless. In December 1948 an informal request was submitted to the Medical Department of a large pharmaceutical manufacturing organization to investigate complaints of a mild type of cutaneous irritation occurring among the 5 female operators in the penicillin filling-room. These complaints were minor, for at no time had any of the affected employees reported to the plant dispensary for treatment, nor had any time been lost from work as a result of this condition.

Chief complaints of the operators were redness, dryness and occasional itching of the skin, most prominent on the forearms, arms and exposed areas of the neck and upper sternal region. Examination revealed erythematous areas, with dryness and some evidence of moderate desquamation. Lines of demarcation on the upper part of the arm at the edge of the sleeve were noted in 1 case.

Questioning revealed that these lesions were transient and that they disappeared over a week end or when the operator worked in a different area for a day or two. It was also stated that the lesions occurred only in this particular room and that when the affected operators worked on the same products in other locations, symptoms did not result. For the latter reason, contact dermatitis due to a particular drug sensitivity was immediately eliminated as a direct causative factor.

### POSSIBLE CAUSATIVE FACTORS

The room where the exposure occurred was then carefully inspected. It is an enclosed room, measuring 12 by 14 feet (366 by 427 cm.), air conditioned in a closed system and lighted by recessed, shielded, fluorescent ceiling fixtures. In the room are two filling tables, each partially hooded by plexiglass sections. Inside of each hood is an ultraviolet sterile-lamp with shield and, suspended from the under side of the cabinet top, a fluorescent light for illumination. There is a shielded ultraviolet sterile-lamp over the door and another above the window on the wall opposite the door.

*Ultraviolet Burn.*—Having eliminated a drug sensitivity reaction as a causative factor, the next most likely possibility appeared to be ultraviolet burn. According to the standard operating procedures in that department, the ultraviolet sterile-lamps were used only when no operators were in the room, such as during rest periods, lunch period and at night. The supervisor gave assurances to the effect that this procedure was being followed to the letter by the operating personnel. This was confirmed by repeated spot checks at irregular intervals. Since the ultraviolet lamps were not in use during times of occupancy, it was obvious that they could not directly be causing these lesions.

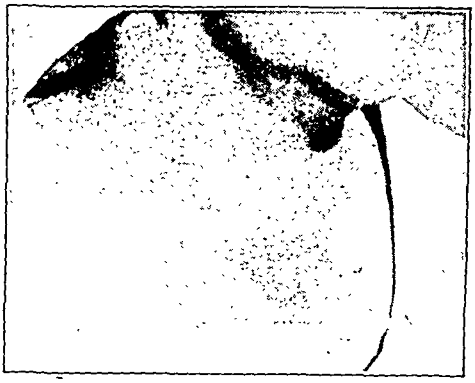

Fig. 1.—Erythematous area with sharp lines of demarcation at the neckline.

As a further check, however, the Safety Department was requested to measure the intensity of the ultraviolet radiation with all the lamps in operation. Readings taken at each work place indicated that the shields afforded the operators effective protection against ultraviolet radiation from the sterile-lamps.

*Ozone Sensitivity.*—Consideration was then given to the possibility of a dermatitis from ozone sensitivity. The type of ultraviolet lamp in use in this room created a not inconsiderable quantity of ozone, easily discernible by odor on entering the room. It was considered entirely possible that ozone was present at times in sufficient concentration to cause cutaneous sensitivity reactions.

Ozone itself is toxic when inhaled in sufficient amounts. For this reason, as well as for its possible role as a skin sensitizer, it was considered desirable to obtain readings of its concentration in the atmosphere of the room under actual working conditons.

The services of the Pennsylvania Bureau of Industrial Hygiene were requested for this study. Determinations were made of ozone concentrations under varying conditions of use of the ultraviolet lamps. Even after the lamps were permitted to operate all night and continuously during the test, the ozone concentration in the room never exceeded the accepted maximum allowable concentration (one part per million parts of air for an eight hour working day). In view of the findings, the field engineer of the bureau did not consider an ozone inhalation hazard to exist and consequently made no recommendations.

In cases of sensitivity dermatitis, however, even relatively minute quantities of a sensitizing agent may cause reactions. In an attempt to eliminate ozone as a causative factor, all ultraviolet equipment in the room was disconnected entirely for a period of two weeks. The cutaneous reactions continued in spite of this.

As a remotely possible source of ozone, the air-conditioning equipment was carefully inspected to discover the existence of any minor short circuit that might have created an arc, with the formation of ozone. No such arc was found, and the equipment was declared in excellent operating condition. Ozone, then, was eliminated as a source of the dermatitis.

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[*] Chairman, Industrial Health Section, Philadelphia County Medical Society.

No definite causative factors having as yet been determined, the filling room was again carefully examined, and an item by item comparison made with the other filling rooms in which cases of dermatitis had not occurred. The only significant mechanical difference in the rooms was the illumination of the hooded area of the filling tables by fluorescent tubes, as compared with ordinary incandescent lighting of the filling tables in the other rooms.

At the same time, a second examination of the affected workers toward the end of a day spent entirely in the penicillin filling room revealed bright erythematous areas on the exposed surfaces of the skin, with sharp lines of demarcation at the clothing edges. The affected areas presented a typical clinical picture of ordinary sunburn. The photograph of one of the affected operators (fig. 1) demonstrates such an area at the neckline. In order that comparison may be made with the worker's normal skin, the uniform at the neckline has been loosened and lowered somewhat from its normal position. Figure 2 also shows the V-shaped erythematous area at the neckline, as well as a roughened, finely desquamating area on the lateral surface of the arm and the dorsal surface of the forearm.

Although I had never seen or heard of cutaneous burns from ordinary fluorescent tubes, the physical and clinical evidence pointed directly to such a condition. At a working distance of only 10 to 14 inches (25 to 35 cm.), it seemed entirely logical that small amounts of ultraviolet radiation from such a tube could be causing burns, provided that the exposure was sufficiently prolonged.

*Output in Watts for a 40 Watt (3,500° Kelvin Color Temperature) White Fluorescent Tube*

| Output | Range | Description |
|---|---|---|
| ... | Below 2,800 A | Ultraviolet |
| 0.01 | 2,800 to 3,200 A | Ultraviolet |
| 0.1 " | 3,200 to 3,800 A | Ultraviolet |
| 1.6 | 3,800 to 5,000 A | Visible light |
| 3.4 | 5,000 to 6,000 A | Visible light |
| 3.0 | 6,000 to 7,600 A | Visible light |
| ... | Above 7,600 A | Infra-red |

Each of the two cabinets in question contained one 20 watt, white fluorescent tube, uncovered except for a narrow metal glare-shield. This tube was in operation all during the production day, so that there was a possible worker-exposure of six to eight hours a day.

A request was forwarded to the manufacturer of the tube for performance specifications and spectral ranges emitted. From the information received, the following picture was constructed.

The shortest wavelength transmitted by a fluorescent tube is 2,800 angstrom units. Wavelengths shorter than this are absorbed by the glass of the tube. The output in watts through the spectral range is shown in the accompanying table.

This particular problem involves the 2,800 to 3,200 angstrom range—the so-called "tanning" or "burning" range. Since the tube in use was a 20-watt tube, there would appear to be an ultraviolet emission of 0.005 watts in the burning range. While admittedly minute in quantity, this amount of ultraviolet radiation at a working distance of only 10 to 14 inches (25 to 35 cm.) might, over a period of six to eight hours, produce a cutaneous condition of the type illustrated.

### REVIEW OF THE LITERATURE

Search of the literature revealed only 1 pertinent report. James[1] listed 2 cases of dermatitis resulting from exposure to fluorescent light while at work. He described a female employee who exhibited a dermatitis about her face and eyelids, first noticed immediately after the installation of a single 40 watt daylight fluorescent tube 3 feet (91.4 cm.) above her desk. With the lamp turned off and without medical treatment, her skin returned to normal in two weeks. After three more weeks without symptoms, she worked under the light again for half a day and experienced a severe recurrence of her dermatitis. This employee was a brunette, who claimed to tolerate sunlight well.

In the second case also, a woman presented a dermatitis involving the back of her neck and her face, particularly the eyelids. Fluorescent lamps had been installed in her office just prior to the start of the symptoms. The installation was multiple in nature, consisting of four 40 watt daylight tubes placed at a distance of about 8 feet (244 cm.) from the worker's back. Although she was soon transferred to another office, she was still exposed to this radiation for ten to thirty minutes each day while consulting her files, and the dermatitis continued. Routine patch tests, including those for cosmetics, gave negative results. The patient stated that her skin itched and burned for hours after each exposure to the fluorescent light. She was instructed to apply a tannic acid solution to the affected areas of the skin several times a day and to wear tinted polaroid glasses. Under this regimen, her cutaneous condition cleared up rapidly. Whenever she failed to apply the solution or to wear her glasses, the dermatitis reappeared. This patient was a blonde with fine, delicate skin. She stated that she normally avoided sunlight in the summer because her skin would not tolerate it.

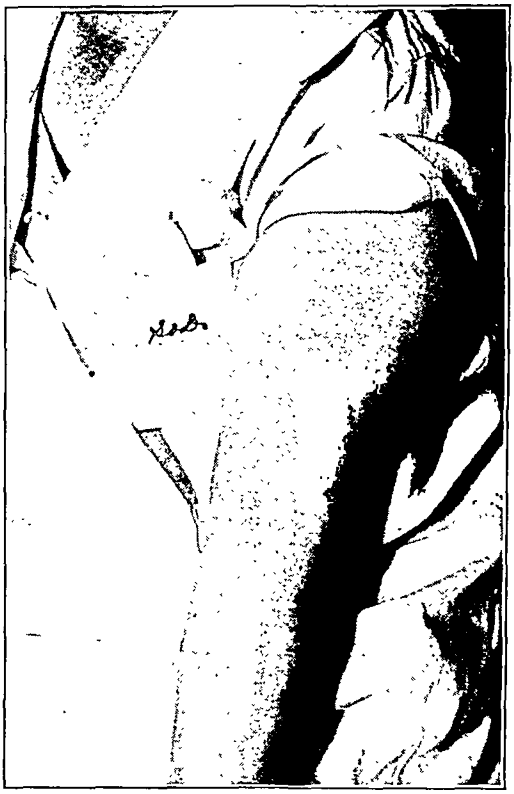

Fig. 2.—Roughened, finely desquamating area on the lateral surface of the arm and the dorsal surface of the forearm; V-shaped erythematous area at the neckline.

The 2 patients of James seem to exhibit a genuine hypersensitivity to one or more of the bands of light emitted from fluorescent tubes. The greater working distances involved, plus the short periods of exposure, would appear to rule out the direct burning action of minute quantities of ultraviolet radiation, such as exists in these burns acquired in the filling room. No other reports could be found in the literature on the occurrence of dermatitis or other dermatologic effects as a result of exposure to fluorescent light.

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[1] James, A. P. R.: Sensitivity of the Skin to Fluorescent Light, Arch. Dermat. & Syph. 44: 256 (Aug.) 1941.

### REMEDIAL MEASURES

With temporary acceptance of the premise that these filling-room operators were suffering from mild ultraviolet burns from fluorescent light, three remedial procedures appeared feasible:

1. To replace the fluorescent fixture with regular incandescent lighting. This was considered undesirable because of the quantity and quality of light required for proper performance of the work, because of the higher amount of heat produced by the incandescent bulbs and for maintenance reasons.

2. To have the affected operators use protective solutions, ointments or creams. This was considered undesirable because of possible contamination of the products being handled. In addition, use of such protective preparations requires interruption of work, is inconvenient for the operator and is difficult to enforce.

3. To guard the offending tube with an all-round plate-glass shield. This would absorb the offending ultraviolet radiation without decreasing the quantity of the illumination or materially altering its quality. In addition, it had the added benefits of requiring no effort on the part of the employee, and of not affecting in any way the products being handled.

Since the third method was obviously the most desirable, a ¼ inch (0.64 cm.) thick all-round plate-glass shield was constructed and installed about the offending tube in one of the two filling tables.

### RESULTS

In two days, the operators at the table with the shielded tube were free of any cutaneous reaction, while the operators at the other table continued to display the same erythematous condition. When the operators exchanged tables, the first group, now at the unprotected table, rapidly exhibited the erythema again, while in the second group the condition just as quickly cleared up.

A similar plate-glass shield was constructed for the fluorescent tube in the other table, and the erythema among these operators disappeared entirely. The condition has not recurred.

### COMMENT

These cases are of particular interest to physicians, since they point out a previously unrecognized hazard from fluorescent lighting. With the increasing use of fluorescent lighting, it is only logical to expect an increase in the number of persons who may react unfavorably to it.

Physicians should keep in mind the possibility that undesirable cutaneous reactions may follow prolonged exposure to fluorescent lighting at relatively short working distances.

1401 Magee Avenue (11).

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**Si Monumentum Requiris, Circumspice.**—Let us recall that Sir Christopher Wren, to whom London owes St. Paul's Cathedral, The Middle Temple Gateway, and many celebrated churches now destroyed by bombs, was an LL.D. of Oxford, who studied and practiced medicine in the City of London. It is recorded that when studying medicine at Oxford he was the first to advocate intravenous injections and watch the effect of injected wine and beer into the veins of dogs, and later he experimented with opium and other drugs on human beings. Wonderful plates illustrating the anatomy of the brain are memorials of his scientific attainments which eventually gave way to architecture. It is a matter of pride to remember that Wren at the height of his celebrity as an architect stayed in London along with Samuel Pepys (when most of their colleagues had fled) while the Great Plague raged, the one reverting to his original profession, the other thinking only of his beloved Navy and the thereatened Dutch Invasion. In Christopher Wren surely the Debt of the Fine Arts to Medicine is well exemplified. So let us remember the epitaph on his tomb in St. Paul's: "Si Monumentum Requiris, Circumspice."—V. B. Green-Armytage, M.D., The Debt of the Fine Arts to Medicine, *Cambridge University Medical Society Magazine*, Easter term, 1949, Reprinted from "The Embryo," Summer, 1947.

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# Council on Pharmacy and Chemistry

## REPORT TO THE COUNCIL

*The Council has authorized publication of the following report from the Therapeutic Trials Committee, a standing committee of the Council on Pharmacy and Chemistry.*

AUSTIN SMITH, M.D., *Secretary*.

## EFFECTIVENESS OF CHLORESIUM IN WOUND HEALING AND DEODORANT EFFECTS

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BURTON A. MORROW, M.D.
RICHARD C. LONG, M.D.
*and*
I. S. RAVDIN, M.D.
*Philadelphia*

Of the various considerations in the management of wounds, those in which clinicians are generally interested are the rate of healing and the odor and appearance of the wound. Many attempts have been made in past decades to introduce new therapeutic agents which would improve the progress of one or all of these qualities. Yet, the multitude of preparations alone suggests that not one of them has been uniformly successful.[1]

Recently, the water-soluble derivatives of chlorophyll have received enthusiastic support for their beneficial effects on various types of wounds. The clinical reports concerning chlorophyll therapy were impressive enough to stimulate our interest in following its effect on the course of various types of wounds at the Hospital of the University of Pennsylvania. For many years the Surgical Clinic and the Harrison Department of Surgical Research have been interested in the healing process. Thus, it was hoped, in spite of past unsuccessful attempts by many investigators, that perhaps an agent at last had been found which would uniformly promote wound healing.

This communication is a report of the use of chorophyll therapy in the management of wounds. It encompasses a study of 36 patients in whom special attention was given to the rate of wound healing and to wound odor and appearance. Forty-two cases were originally included in the project, but 6 of these cases have been discarded from the present series because of either the patients' failure to return or the intervention of other therapeutic measures which invalidated the results.

### RATE OF WOUND HEALING

Since no substance has been found to date uniformly to promote and accelerate wound healing and in view of other convincing experimental evidence, most investigators believe that strict adherence to sound surgical principles is more important than the application of any substance in the process of wound healing and that the use of various agents prepared for the local treatment of wounds should not be considered a substitute for good wound care.[2] Emphasis has thus been placed on the importance of asepsis, the gentle handling

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*Several tables and illustrations have been omitted to conserve space; these will be included in the reprints.*

From the Harrison Department of Surgical Research Schools of Medicine, University of Pennsylvania and the Surgical Clinic of the Hospital of the University of Pennsylvania, Philadelphia.

The investigation was conducted under the auspices of The Therapeutic Trials Committee of The Council on Pharmacy and Chemistry pursuant to a contract between The Rystan Co., Inc., and The University of Pennsylvania.

[1] (*a*) Smelo, L. S.: Arch. Surg. **33:** 493 (Sept.) 1936. (*b*) Brush, B. E., and Lam, C. R.: Surgery **12:** 355, 1942. (*c*) Williams, R. H., and Bissell, G. W.: Arch. Surg. **49:** 225 (Oct.) 1944.

[2] (*a*) Smelo.[1a] (*b*) Zintel, H. A.: Surg. Clin. North America 1404-1415 (Dec.) 1946. (*c*) Churchill, E. D.: Ann. Surg. **120:** 268, 1944.

of tissue, excision of all devitalized tissue and the preservation of the local blood supply. Not only rigorous care of the local wound, but also consideration of the general condition of the patient has been repeatedly stressed by numerous authors.[3]

Several publications in the last few years have reported that chlorophyll derivatives possess tissue-stimulating properties.[4] Smith and Livingston,[4a] in a series of 1,372 experimental lesions produced in animals and treated with chlorophyll, showed healing time to be decreased by approximately 25 per cent in over two thirds of the animals. These results, together with other clinical reports concerning chlorophyll therapy,[5] have prompted the present study of testing objectively its effect on the healing rate of wounds in man.

## METHOD

It was realized from the very first that the evaluation of a new agent of this type is a difficult task. Variables introduced by numerous extraneous local and general factors may readily mislead the investigator to unjustifiable conclusions. Furthermore, one must avoid the use of clinical impressions of the encouraging response of the wound to the application of the local agent. To use such clinical impressions, even though compared with the effects of other materials used alternately or after a previous period of resistance to healing, is to introduce errors that readily invalidate the results of the study. It is evident then, as Smelo [1a] pointed out over a decade ago, that reliable assessment of the so-called wound stimulant requires more accurate methods of evaluation than those generally employed. The problem demands a quantitative approach.

Such a quantitative method was provided by the studies of Carrel and Hartman,[6] who demonstrated that superficial wound repair in man occurs according to a regular geometric curve which may be expressed by a mathematic equation in function of area and time. Du Noüy's [7] formula of these relationships permits the prediction of the period in which a wound should normally heal and the calculation of the expected area of the wound at any time during the course of repair. By determining the normal rate of healing one is thus more qualified to take into consideration the variables that may speed or retard tissue repair.

The method of Smelo [1a] was utilized to determine the precise measurements of the surface area of the wound each time it was dressed. The area was obtained by placing a transparent celluloid film directly on the wound and tracing the line of union between the epithelial edge and the granulating surface. This tracing was then transferred to a sheet of paper and the area determined with a planimeter.

Cultures were taken at frequent intervals to follow the effect of the chloresium preparations on the bacteriologic makeup of the wounds. Quantitative dilution methods were not employed, in view of the convincing work of Anderson,[8] who showed that decreased bacterial counts do not in themselves tend to promote wound healing.

The investigation on healing was carried out on 25 patients, all in good general health unless otherwise stated. The wounds differed in size and etiologic aspects. Every effort was made to determine the presence of any factor remote from the site of the wound which may have unduly influenced the local changes in healing. In the series of patients treated, 11 had infected wounds, 3 had surgically clean wounds, 3 had burns, 6 had lesions resulting from venous stasis and 2 had ulcers due to sickle cell anemia.

Chloresium ointment in moderately generous quantities was applied to a square gauze dressing, which was placed over the wound and held there with simple bandaging. Dressings were changed every other day. When necessary, local débridement of devitalized tissue was performed. Nineteen of the 25 patients were treated as outpatients. The remainder were ward patients with ambulatory privileges for all but 2 patients.

## RESULTS

In this investigational study, the terms "accelerated," "normal" and "retarded" with respect to healing time have the following definitions: Accelerated means the time of healing was faster, normal means the time was equal, and retarded means that the time was slower than was theoretically expected by du Noüy's formula.

The series of patients is divided into two groups on the basis of whether complete healing was achieved during the course of therapy. Of the 25 patients, 18 in the first group were still receiving chlorophyll therapy when the project was stopped for evaluation (table 1). In the second group are the 6 patients who achieved complete healing of their wounds prior to cessation of the study (table 2). In addition, 1 other patient experienced a sensitivity skin reaction to the chloresium ointment, and therapy was discontinued before adequate data were available. Analysis of the results in the first group reveals that 14 patients had retarded healing, 2 normal healing and 2 accelerated healing. These results were classified on the basis of a comparison between the actual measured surface area and the theoretically expected surface area after the respective days of healing as calculated by du Noüy's [7] formula. A deviation of plus or minus 10 per cent from the calculated area was considered within the range of normal healing. Of the 2 patients whose wound showed accelerated healing, 1 had a wound following a recurrent abscess of the thigh and the other had a burn.

TABLE 5.—*Interpretation of Quantitative Results*

| Term Used | 4+ | 3+ | 2+ | 1+ |
|---|---|---|---|---|
| Excellent | 0 | ... | ... | ... |
| Very effective | 1+ | 0 | ... | ... |
| Satisfactory | 2+ | 1+ | 0 | ... |
| Equivocal | 3+ | 2+ | 1+ | 0 |
| No benefit | 4+ | 3+ | 2+ | 1+ |

The results of wound healing in patients of the second group were determined by a comparison of the actual time with the theoretically expected time required for complete wound healing. Of the 6 patients in this group, 1 had retarded healing, 2 had normal healing and 3 had accelerated healing. Likewise in this group a deviation of plus or minus 10 per cent was considered within the normal range. The instances of accelerated healing in this group occurred in 1 patient with an ulcer resulting from a furuncle, in another with an ulcer due to venous stasis and in the third with a lesion resulting from a burn.

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[3] Zintel.[2b] Thompson, W. D.; Ravdin, I. S., and Frank, I. L.: Arch. Surg. **36:** 500 (March) 1938. Hartzell, J. B.; Windfield, J. M., and Irvin, J. L.: J. A. M. A. **116:** 669 (Feb. 22) 1941. Rhoads, J. E., and Kasinskas, W.: Surgery **11:** 38, 1942. Sanders, G. B., and Garrison, W. S.: Arch. Surg. **46:** 40 (Jan.) 1943.

[4] (*a*) Smith, L. W., and Livingston, A. E.: Am. J. Surg. **62:** 358, 1943. (*b*) Smith, L. W.: J. Lab. & Clin. Med. **29:** 241, 1944.

[5] Bowers, E. F.: Am. J. Surg. **73:** 37, 1947. Boehme, E. J.: Lahey Clin. Bull. **4:** 242, 1946. Morgan, W. S.: Guthrie Clin. Bull. **16:** 94, 1947. Cady, J. B., and Morgan, W. S.: Am. J. Surg. **75:** 562, 1948.

[6] Carrel, A., and Hartman, A.: J. Exper. Med. **24:** 429, 1916.

[7] DuNoüy, P. L.: J. Exper. Med. **24:** 461, 1916.

[8] Anderson, D. P.: Ann. Surg. **108:** 918, 1938.

Untoward reactions to chloresium consisted primarily of slight itching, which was noted in 6 patients. In 1 of 2 other patients in whom vesicular eruptions occurred with use of chloresium, 1 patient was known to have a definite allergic background. Treatment should be discontinued if redness or itching appear during treatment.

In 3 out of 10 instances the chloresium ointment may have had bacteriostatic activity. The organisms affected included hemolytic Staphylococcus aureus, alpha and beta streptococci and an unidentified gram-negative rod.

## COMMENTS

In an attempt to quantitate the effect of chlorophyll therapy on wound healing, it is believed that a more accurate means of evaluation has been used than in previous reports. In the series herein reported ideal quantitative evaluation was not possible because of the limitations of the du Noüy formula. Yet, what has been completed with the use of this formula is considered a more accurate evaluation than clinical observations even with attempted controls. The phenomenon of wound healing is notable for its complexity and inherent variables, and clinical observations do not usually consider the differential effect of these variables on the healing process. The advantage of one's using the du Noüy formula lies in the recognition of two of the most significant of these variables, the age of the patient and the size of the wound. Other variables known to influence the process of wound healing,[2b] but not expressed in the du Noüy formula, include the following, which may be grouped under two headings: (1) general status of the patient—hypoproteinemia, vitamin deficiency (A, C or K), electrolyte and water balance, anemia or systemic infection—and (2) local factors—tissue trauma, presence of devitalized tissue at the wound site, local temperature and integrity of the blood supply.

Table 6.—*Calculations for the Group of Patients Whose Wounds Did Not Heal to Completion During the Course of Chlorophyll Therapy*

| Patient | Age | S(o), Sq. Cm. | T (Healing Days) | $T^2$ | i* | B† | $\frac{i}{B} = K$ | B′† | $\frac{100}{B'} = 2P$ | $\log S(T) = \log S(o) - K\left(T + \frac{T^2}{2P}\right)$ The du Noüy Formula | S(T) Theoretically Expected Area in Sq. Cm. After T Days | Actual Measured Area in Sq. Cm. After T Days | Interpretation of Rate of Wound Healing ‡ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B. H. | 46 | 5.16 | 34 | 1156 | 0.0708 | 1.19 | 0.05950 | 1.453 | 68.82 | 7.6896-10 | Less than 0.4§ | 2.19 | Retarded |
| H. H. | 69 | 3.94 | 25 | 625 | 0.0700 | 1.19 | 0.05880 | 1.450 | 68.97 | 8.5920-10 | Less than 0.4§ | 1.80 | Retarded |
| G. D. | 21 | 43.34 | 26 | 676 | 0.0420 | 1.34 | 0.03130 | 1.325 | 75.40 | 0.545 | 3.51 | 23.35 | Retarded |
| A. E. | 71 | *9.55* | 25 | *625* | *0.0200‖* | *1.45* | *0.01380* | *1.230* | *81.30* | *0.5289* | 3.38 | 1.61 | Accelerated |
| W. Y. | 32 | 2.64 | 9 | 81 | 0.0700 | 1.19 | 0.05880 | 1.450 | 68.97 | 9.8233-10 | 0.67 | 1.23 | Retarded |
| J. P. | 37 | 22.06 | 23 | 529 | 0.0346 | 1.37 | 0.02530 | 1.290 | 77.40 | 0.5888 | 3.88 | 5.81 | Retarded |
| C. B. | 61 | 27.74 | 36 | 1296 | 0.0200‖ | 1.45 | 0.01380 | 1.230 | 81.30 | 0.7264 | 5.324 | 25.03 | Retarded |
| M. C. | 22 | 5.89 | 2 | | Untoward Sensitivity Reaction—Data Insignificant | | | | | | | | |
| J. C. | 15 | 1.29 | 30 | 900 | 0.0800 | 1.14 | 0.0702 | 1.490 | 67.12 | 7.7264-10 | Less than 0.4§ | 0.52 | Retarded |
| R. L. | 32 | 7.74 | 22 | 484 | 0.0618 | 1.23 | 0.05015 | 1.413 | 70.78 | 9.4410-10 | Less than 0.4§ | 2.58 | Retarded |
| J. W. | 55 | 7.81 | 11 | 121 | 0.0445‖ | 1.32 | 0.03360 | 1.335 | 74.90 | 0.4689 | 2.94 | 7.61 | Retarded |
| H. W. | 72 | 25.88 | 16 | 256 | 0.0200‖ | 1.45 | 0.01380 | 1.230 | 81.30 | 1.1488 | 14.08 | 14.19 | Normal |
| M. D. | 29 | 3.55 | 7 | 49 | 0.0710 | 1.19 | 0.05990 | 1.454 | 68.80 | 0.1844 | 1.53 | 1.16 | Accelerated |
| C. G. | 61 | 4.13 | 27 | 729 | 0.0700 | 1.19 | 0.05880 | 1.450 | 68.97 | 8.4065-10 | Less than 0.4§ | 4.59 | Retarded |
| F. B. | 60 | 184.50 | 41 | 1681 | 0.0200 | 1.45 | 0.01380 | 1.230 | 81.30 | 1.4148 | 25.98 | 157.40 | Retarded |
| R. C. | 28 | 9.99 | 22 | 484 | 0.0640 | 1.22 | 0.05245 | 1.420 | 70.41 | 9.4856-10 | Less than 0.4§ | 5.29 | Retarded |
| M. M. | 62 | 34.25 | 5 | 25 | 0.0200‖ | 1.45 | 0.01380 | 1.230 | 81.30 | 1.4608 | 28.90 | 30.12 | Normal |
| R. R. | 20 | 9.22 | 34 | 1156 | 0.0716 | 1.18 | 0.06070 | 1.460 | 68.59 | 7.8777-10 | Less than 0.4§ | 0.71 | Retarded |
| P. B. | 48 | 11.55 | 17 | 2890 | 0.0328‖ | 1.38 | 0.02376 | 1.287 | 77.70 | 9.7746-10 | 0.595 | 1.61 | Retarded |

* Index of healing (see table 3).

† A factor obtained from figure 2.

‡ Determined by a comparison of the theoretically expected area to the actual area measured after T days of healing.

§ When the calculated area of the wound is 0.4 sq. cm. or less, the wound is considered to be healed.

‖ Extrapolated values (see figure 1).

It is therefore necessary to establish some quantitative relationship between the rate of wound healing and these other variables even though it is a difficult task. In the evaluation of the results in the present study, the factors listed herein under general conditions of the patient by a careful clinical survey were not considered significant variables in 20 of the 24 patients. Of the 4 patients in whom a general factor was considered significant, 2 patients had sickle cell anemia and 1 patient a positive serologic reaction, and all were found to have retarded healing by our study. The other patient had hypoproteinemia, yet unexpectedly was found to have accelerated wound healing.

Of the local factors listed, variations in temperature of the local part was not thought to be of significance in this group of patients. Tissue trauma, on the other hand, appeared to be an influencing factor in 1 patient with a decubitus ulcer following a burn over the sacrum, but healing time was normal. In regard to presence of devitalized tissue, every attempt was made completely to eliminate it from the wound site, and this was successful in most instances. In 4 patients it is possible that devitalized tissue was not so thoroughly removed as to eliminate its influence on the healing process. Three of these 4 patients had retarded healing; 1 had accelerated healing.

The last of the local factors listed, the integrity of the blood supply, is the major significant variable that was not adequately evaluated by our study and represents an important limitation to the completion of an accurate quantitative evaluation of chlorophyll as a wound stimulant in man. It was hoped that the accumulation of a very large series of control cases would provide corrective factors to the du Noüy formula to overcome this limitation, and such an attempt was made. However, because of the wide range of results obtained, no definite relationship could be established.

With the method used, the variability was too great to lend itself to a quantitative approach.

### ODOR AND APPEARANCE OF THE WOUND

By contrast to the objective approach of the section of rate of wound healing, a study of the effect of chloresium on the odor and general appearance of a wound, by necessity, requires subjective evaluation. It is recognized that there is a wide range of opinion in reference to odor. Yet, the average of a group of opinions, it was decided, should more closely approximate the true effect than any other known method. An arbitrary quantitative estimation of the intensity of odor of the wound was therefore used as a measure of the effect of chlorophyll therapy. This system ranged from 0 for absence of odor to 4 plus for maximum odor. At least three and up to six opinions were obtained from various staff personnel and the average taken as representative of the final evaluation.

In the series of 11 patients studied (table 4), 7 patients had abdominoperineal resections, in 6 of whom chloresium solution was used to irrigate the posterior perineal wound daily after the packing was removed on the eighth day. The other patient, with an abdominoperineal resection of six years' duration, returned for fulguration of a recurrent rectal carcinoma and for a left anterolateral cordotomy for relief of pain. Two patients had a transverse colostomy; 1 patient had a draining abdominal fistula, and 1 patient had an ulcerating bronchogenic carcinoma. There was also daily use of chloresium solution with the change of dressings in these latter cases. Table 5 shows the means by which the quantitative results were interpreted in descriptive terms. Six of the patients acted as their own controls, with the use for varying periods of time of dry dressings, saline irrigations or chloroazodin (azochloramid®). Additional controls were obtained from similar types of wounds in different patients. With respect to the control series as a whole, chlorophyll therapy was shown consistently to decrease the odor of foul-smelling wounds, and it did so, on the average, within twenty-four to forty-eight hours. No untoward reactions were noted in this group of patients.

Of the 7 patients with abdominoperineal resections, chloresium solution was very effective in 5 and satisfactory in the other 2 patients. Of the 2 patients with transverse colostomy, 1 patient received very effective and the other satisfactory benefit. The patient with a draining abdominal fistula had a satisfactory therapeutic result and the patient with the ulcerating bronchogenic carcinoma a very effective decrease in odor with the use of chlorophyll therapy. In 1 patient with an abdominoperineal resection, chloroazodin was almost as effective a deodorant as chloresium but had the disadvantage of causing local irritation.

In reference to wound appearance, it was the almost unanimous opinion of those concerned with the project that the chloresium ointment tended to produce a clean granulating wound. Regardless of the effect on the healing rate, the wounds had a healthy pink appearance and, in general, looked exceptionally good.

### SUMMARY

In a study of the effect of chlorophyll therapy on the rate of wound healing, various types of wounds were closely observed. With reference to the du Noüy formula, chlorophyll therapy was associated with acceleration of healing in 5 out of 24 patients. In 3 of these 5 patients, local or general factors known to impede the healing process were present. The wounds of 4 patients healed in the normal expected time, in 2 of whom healing was influenced by local factors. The remainder, 15 patients, had a rate of healing less than the theoretical by the du Noüy formula; of these, 13 had either local or general factors present.

These results, while not uncontroversial, suggest that chlorophyll therapy is not a consistent promoter in every case of wound healing within the time limits expected under du Noüy's formula. To do so an agent should be able uniformly to reduce the expected time of healing in every case in all types of wounds.

Chlorophyll therapy did not give any evidence of retarding wound healing.

Chlorophyll was found consistently to be an effective deodorant when used on foul-smelling wounds. Untoward effects of chlorophyll occurred in a minimal number of patients and consisted mostly of itching. Chlorophyll therapy did tend to improve the appearance of wounds and give them a healthy granulating appearance.

TABLE 7.—*Calculations for the Group of Patients Whose Wounds Healed to Completion with Chlorophyll Therapy*

| Patient | Age | S(o), Sq. Cm. | S(T), Sq. Cm. | $\frac{S(o)}{S(T)}$ | $\log\frac{S(o)}{S(T)}$ | i * | B † | $\frac{1}{B} = K$ | B′ † | $\frac{100}{B'} = 2P$ | P | Calculated Time for Normal Expected Wound Healing ‡ $T = \frac{-PK \pm \sqrt{PK\left[PK + 2\log\frac{S(o)}{S(T)}\right]}}{K}$ Days | Actual Time Required for Complete Healing, Days | Interpretation of Rate of Wound Healing § |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. C. | 55 | 4.52 | 0.4 | 11.300 | 1.05310 | 0.0700 | 1.1900 | 0.05880 | 1.450 | 68.97 | 34.49 | 15.30 | 12 | Accelerated |
| E. M. | 43 | 19.63 | 0.4 | 49.070 | 1.69080 | 0.0290‖ | 1.4030 | 0.02067 | 1.270 | 78.74 | 39.37 | 18.50 | 17 | Normal |
| N. R. | 39 | 6.77 | 0.4 | 16.925 | 1.22855 | 0.0618 | 1.2325 | 0.05015 | 1.413 | 70.78 | 35.39 | 19.25 | 19 | Normal |
| R. A. R. | 54 | 9.09 | 0.4 | 22.730 | 1.35660 | 0.0380‖ | 1.3600 | 0.02794 | 1.310 | 76.32 | 38.16 | 14.70 | 9 | Accelerated |
| L. O. | 66 | 13.67 | 0.4 | 34.175 | 1.53370 | 0.0200‖ | 1.4500 | 0.01380 | 1.230 | 81.30 | 40.65 | 62.70 | 27 | Accelerated |
| M. C. | 53 | 4.26 | 0.4 | 10.650 | 1.02730 | 0.0700 | 1.1900 | 0.05880 | 1.450 | 68.97 | 34.49 | 12.50 | 17 | Retarded |

* Index of healing (see table 3).

† A factor obtained from figure 2.

‡ Equation derived from the original du Noüy formula of $\log S(T) = \log S(o) - K\left(T + \frac{T^2}{2P}\right)$

§ Determined by a comparison of the theoretically expected time to the actual time required for complete wound healing.

‖ Extrapolated value (see fig. 1).

# NEW AND NONOFFICIAL REMEDIES

*The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.*

Austin Smith, M.D., *Secretary.*

---

**AMOBARBITAL SODIUM** (See New and Nonofficial Remedies 1949, p. 452).

The following dosage form has been accepted:

Eli Lilly and Company, Indianapolis 6

**Amytal Sodium:** 0.75 Gm. ampuls.

U. S. trademark 161,125.

**CONTRACEPTIVE JELLIES AND CREAMS** (See New and Nonofficial Remedies 1949, p. 285).

The following dosage form has been accepted:

Lanteen Medical Laboratories, Inc., Chicago 10

**Lanteen Jelly:** 85.35 Gm. collapsible tubes. A water dispersible jelly having a $p_H$ of 5.2, prepared from the formula:

| | Per Cent |
|---|---|
| Ricinoleic acid | 0.50 |
| Hexylresorcinol | 0.10 |
| Sodium benzoate | 0.20 |
| Chlorothymol | 0.00769 |
| Gum tragacanth | 1.73 |
| Starch | 0.97 |
| Hydrochloric acid | 0.043 |
| Calcium hydroxide | 0.0264 |
| Perfume | 0.0126 |
| Water sufficient to make | 100.00 |

Packaged with applicator or as a refill without applicator.

**Lanteen Applicator:** A transparent plastic tube threaded to screw onto the tubes of Lanteen Jelly to permit filling by compression of the tube.

**DIGITOXIN-U. S. P.** (See New and Nonofficial Remedies 1949, p. 267).

The following dosage forms have been accepted:

Eli Lilly and Company, Indianapolis 6

**Tablets Crystodigin:** 0.05 mg. and 0.15 mg.

The Upjohn Company, Kalamazoo 99, Mich.

**Tablets Digitoxin:** 0.1 mg. and 0.2 mg.

Wyeth, Incorporated, Philadelphia 3

**Tablets Purodigin:** 0.15 mg.

U. S. trademark 411,271.

**ESTROGENIC SUBSTANCES (WATER INSOLUBLE)** (See New and Nonofficial Remedies 1949, p. 367).

The following dosage forms have been accepted:

Bio-Intrasol Laboratories, Inc., Brooklyn 3, N. Y.

**Solution Natrovin in Oil:** 10,000 I. U. per cc. in sesame oil, 1 cc. ampuls and 30 cc. vials. Preserved with chlorobutanol 0.5 per cent.

Kremers-Urban Company, Milwaukee 1

**Solution Estrugenone in Oil:** 5,000 I. U. per cc. in sesame oil, 1 cc. ampuls. Preserved with chlorobutanol 0.5 per cent.

Carroll Dunham Smith Pharmacal Company, New Brunswick, N. J.

**Aqueous Suspension Estrusol:** 50,000 I. U. per cc., 5 cc. and 15 cc. vials. Preserved with chlorobutanol 0.5 per cent.

**FOLIC ACID** (See New and Nonofficial Remedies 1949, p. 559).

The following dosage form has been accepted:

Eaton Laboratories, Inc., Norwich, N. Y.

**Tablets Folic Acid:** 5 mg.

**MANNITOL HEXANITRATE** (See New and Nonofficial Remedies 1949, p. 273).

The following dosage form has been accepted:

Eaton Laboratories, Inc., Norwich, N. Y.

**Tablets Mannitol Hexanitrate:** 30 mg.

**MERCUROPHYLLINE INJECTION-U. S. P.** (See New and Nonofficial Remedies 1949, p. 317).

The following dosage forms have been accepted:

Kremers-Urban Company, Milwaukee 1

**Solution Mercurophylline:** 62 mg. per cc., 5 cc. ampuls. Each 5 cc. contains 80 mg. of mercury as the mercurial salt.

**Solution Mercurophylline with Benzyl Alcohol 2%:** 155 mg. per cc., 2 cc. ampuls. Each 2 cc. contains 80 mg. of mercury as the mercurial salt.

**METHIONINE** (See New and Nonofficial Remedies 1949, p. 415).

The following dosage form has been accepted:

Abbott Laboratories, North Chicago, Ill.

**Tablets Methionine:** 0.5 Gm.

**PENICILLIN** (See New and Nonofficial Remedies 1949, p. 148).

The following dosage forms have been accepted:

Chas. Pfizer & Co., Inc., Brooklyn 6

**Crystalline Procaine Penicillin G in Oil:** 300,000 units per cc. in sesame oil, 1 cc. vial.

Sterone Chemical Co., Inc., Jamaica 2, N. Y.

**Crystalline Procaine Penicillin G (Micronized) in Oil:** 300,000 units per cc. in sesame oil with aluminum monostearate 2 per cent, 10 cc. vials.

**STREPTOMYCIN** (See New and Nonofficial Remedies 1949, p. 159).

The following dosage form has been accepted:

Bio-Ramo Drug Co., Baltimore 1

**Streptomycin Calcium Chloride Complex:** 20 cc. vials containing streptomycin calcium chloride complex equivalent in activity to 1 Gm. of streptomycin base.

**SULFADIAZINE-U. S. P.** (See New and Nonofficial Remedies 1949, p. 134).

The following dosage form has been accepted:

Marvin R. Thompson, Inc., Stamford, Conn.

**Suspension Sulfadiazine with Sodium Lactate:** 473 cc. and 3.78 liter bottles. A liquid suspension containing 0.5 Gm. sulfadiazine and 1.5 Gm. sodium lactate per 5 cc.

**SULFADIAZINE-SULFAMERAZINE COMBINED** (J. A. M. A., May 7, 1949, p. 21).

The following dosage forms have been accepted:

Pitman-Moore Company, Indianapolis 6

**Magmoid Sulfadimer with Sodium Lactate:** 0.5 Gm. per 5 cc., 59.15 cc., 354.9 cc. and 3.78 liter bottles. A suspension containing 1.5 Gm. sulfadiazine, 1.5 Gm. sulfamerazine and 3 Gm. sodium lactate per 30 cc. solution.

The Warren-Teed Products Company, Columbus 8, Ohio

**Suspension Bi-Sulfazine:** 0.5 Gm. per 5 cc., 473 cc. and 3.785 liter bottles. A suspension containing 1.5 Gm. sulfadiazine and 1.5 Gm. sulfamerazine per 30 cc. solution.

**TESTOSTERONE PROPIONATE-U. S. P.** (See New and Nonofficial Remedies 1949, p. 407).

The following dosage forms have been accepted:

Rare Chemicals, Inc., Harrison, N. J.

**Solution Testosterone Propionate in Oil:** 10 mg. per cc. in sesame oil, 10 cc. vials. Preserved with phenyl mercuric borate 1 : 50,000.

**Solution Testosterone Propionate in Oil with Benzyl Alcohol 3%:** 50 mg. per cc. in sesame oil, 10 cc. vials. Preserved with phenyl mercuric borate 1 : 50,000.

Smith-Dorsey Company, Lincoln, Neb.

**Solution Testosterone Propionate in Oil with Benzyl Alcohol 3%:** 25 mg. per cc. in persic oil, 10 cc. vials.

***d*-TUBOCURARINE CHLORIDE** (See New and Nonofficial Remedies 1949, p. 210).

The following dosage form has been accepted:

Endo Products, Inc., Richmond Hill 18, N. Y.

**Solution *d*-Tubocurarine Chloride:** 3 mg. (20 units) per cc., 10 cc. vials. Preserved with chlorobutanol 0.5 per cent.

# Council on Physical Medicine and Rehabilitation

*The Council on Physical Medicine and Rehabilitation has authorized publication of the following reports.*

Howard A. Carter, *Secretary.*

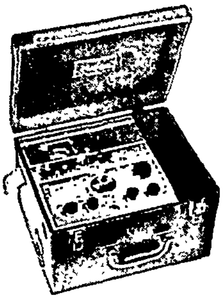
## CARDIOTRON, MODEL PC-2, ACCEPTABLE

Manufacturer: Electro-Physical Laboratories, Inc., 290 Dyckman Street, New York 34.

The Cardiotron, Model PC-2, is a direct-writing electrocardiograph in a portable case. As normally supplied it operates on 60 cycle alternating current at 100 to 130 volts. It draws a current of 0.85 ampere.

The dimensions of the cabinet are 22 by 31 by 37 cm. (8¾ by 12 by 14⅝ inches). Rubber bumpers add ½ inch to the height and width, and a carrying handle adds ⅞ inch to the width. The complete assembly, including all accessories, weighs 14.5 Kg. (32 pounds); the shipping weight is 20 Kg. (45 pounds).

The accessories are one 7-lead patient cable, four large electrodes, three small electrodes, four wrist bands, a chest band, tube of electrode jelly, roll of Permograph paper and reel, ground wire, emery board, two spare power line fuses, power cable, electrode jelly brush and protective cloth covering.



Cardiotron, Model PC-2

The apparatus was tested both physically and clinically in laboratories acceptable to the Council, and was found to satisfy the published requirements for acceptance of electrocardiographs. The Council on Physical Medicine and Rehabilitation voted to include the Cardiotron, Model PC-2, in its list of accepted devices.

## MCKESSON WATERLESS METABOLOR, MODEL 185, ACCEPTABLE

Manufacturer: McKesson Appliance Company, 2226-2236 Ashland Avenue, Toledo 10.

The McKesson Waterless Metabolor, Model 185, is a bellows type apparatus with an electrically driven timing device. The bellows is circular in form and opens somewhat like a book; it is completely housed within a white case, so that its movements are evident only to the technician by way of a pointer called the Bellows Position Indicator. A soda lime container is mounted outside the Metabolor proper so as to facilitate the removal of exhausted absorbent; a color indicator in a small glass cylinder where it can be seen by the technician changes from bright green to dark brown when the soda lime approaches saturation with carbon dioxide.

The weight of the apparatus is given as 30 Kg. (65 pounds) and the over-all dimensions are 112 by 43 by 58 cm. (44 by 17 by 23 inches). Accessories include ink, two face hoods, head harness, two mouthpieces, a nose clamp, a tank wrench, a spanner wrench and a nomographic calculator made of cardboard. The shipping weight is 34 Kg. (75 pounds). The motor in the Metabolor submitted to the Council required a 110 volt alternating current and drew 2 watts of power, but the firm states that this unit is manufactured for all voltages and cycle frequencies ordinarily encountered in alternating current and also for direct current.

This device has a disadvantage which it shares with other waterless metabolimeters already accepted by the Council; namely, that it is difficult to verify the correctness of the volume readings. It is inconvenient to measure directly the volume of air expelled when the bellows is compressed, and practically impossible to calculate it. This is deplorable in view of the low reliability of basal metabolic rates, as noted in The Journal, March 22, 1941, pages 1187 to 1195, and the *Quarterly Bulletin, Northwestern University Medical School* (19: 105-110, 1945). It also impairs the value of waterless metabolimeters as equipment for demonstration and teaching. However, the fact that friction is less in a bellows and that the patient cannot see the movements inside the housing probably makes for a smoother respiratory tracing.

The Council on Physical Medicine and Rehabilitation voted to include the McKesson Waterless Metabolor, Model 185, in its list of accepted devices.

## NEGATIVE PRESSURE SINUS UNIT ACCEPTABLE

Manufacturer: Inhalational Equipment Company, 248 East 119th Street, New York 35.

The Negative Pressure Sinus Unit is a device made of Pyrex glass and designed to connect with various accessories (oxygen tank, oxygen regulator, rubber hand bulb, nebulization foot pump, tubing and stoppers) in such a way that an intermittent suction can be produced in the nasal passages and accessory sinuses; the periodic release of the suction is intended to cause a brief influx or puff of aerosol into the sinuses. Frequent alternations between suction and normal pressure will produce a series of inflows of medicated air into the sinuses until a considerable amount of aerosol is introduced.

The weight of the device is about 85 Gm. (3 ounces); the shipping weight is about 200 Gm. (7 ounces), and the over-all dimensions are 23 by 23 by 8 cm. (9 by 9 by 3 inches).

The Council secured evidence that this device produces a satisfactory mist and that with its use medication can be induced to enter a sinus if the aperture is patent. The Council, therefore, voted to include the Negative Pressure Sinus Unit in its list of accepted devices with the understanding that the claims for any drugs used with this unit be confined to those found acceptable by the Council on Pharmacy and Chemistry.

## DWYAD PORTABLE OXYGEN UNIT FOR AEROSOL MEDICATION ACCEPTABLE

Manufacturer: The Penicillin Machine Company, Box 751, Cleveland 22.

The Dwyad Portable Oxygen Unit for Aerosol Medication is a device that uses compressed oxygen from a tank for the purpose of nebulizing aqueous medicaments. It consists of a light weight nonshatterable tank with working mechanism attached to the nebulizer, so that the inhalation can be taken in through either mouth or nose as desired.

The assembly weighs 4.5 Kg. (10 pounds), and the shipping weight is 5.4 Kg. (12 pounds). The over-all dimensions are 20 by 20 by 89 cm. (8 by 8 by 35 inches).

Evidence was obtained that the apparatus performed as represented by the manufacturer.

The Council on Physical Medicine and Rehabilitation voted to include the Dwyad Portable Oxygen Unit for Aerosol Medication in its list of accepted devices.

# Council on Foods and Nutrition

*The following products have been accepted as conforming to the Rules of the Council.*

James R. Wilson, M.D., *Secretary.*

**The National Drug Company, Philadelphia.**

Protinal—Chocolate Flavored consists of high nitrogen casein, cocoa, saccharin, coumarin and powdered sugar.

*Analysis* (submitted by manufacturer).—Total nitrogen 9.7 per cent, carbohydrate 24.0 per cent, moisture 5.0 per cent, ether extractables 1.0 per cent, sodium 0.03 per cent.

*Calorics.*—3.4 per gram; 102 per ounce.

*Vitamins.*—No vitamin claims are made, but water-soluble vitamins of milk are contained in the product.

*Use.*—A whole protein supplement for oral use when extra protein or a concentrated source of protein is required in the diet.

Protinal—Vanilla Flavored consists of high nitrogen casein, coumarin, vanillin and powdered sugar.

*Analysis* (submitted by manufacturer).—Total nitrogen 9.7 per cent, carbohydrate 30.0 per cent, moisture 5.0 per cent, ether extractables 0.5 per cent, sodium 0.03 per cent.

*Calorics.*—3.60 per gram; 108 per ounce.

*Vitamins.*—No vitamin claims are made, but water-soluble vitamins of milk are contained in the product.

*Use.*—Whole protein supplement for oral use when extra protein or a concentrated source of protein is required in the diet.

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SATURDAY, AUGUST 27, 1949

## INDUSTRIAL POLLUTION OF HUMAN ENVIRONMENT

The survival of man depends on his ability to adapt himself to his environment. For thousands of years changes in man's environment resulted from natural causes beyond his control; he tried to mitigate their impact by migrating from regions that had become unfavorable to regions more favorable. Such attempts were not always successful, for various types of primitive man disappeared. About one hundred years have passed since modern man first experimented in modifying his natural environment by the addition of numerous new and often artificial products created by modern industry. Occupational diseases furnish a vivid example of the many and frequently serious new health hazards to which the industrially employed part of mankind has become exposed. The inclusion of some of these agents in consumer goods, such as foodstuffs, cosmetics, medicines, household goods and clothing, and their sometimes indiscriminate use have brought the general population into close contact with the injurious factors in the modern industrial environment. Perhaps the most important and alarming aspect of the recent change in human environment is the increasing and often severe pollution of the air, soil and water with both industrial wastes and regular products of industrial manufacture, such as pesticides and coal and petroleum road tars and asphalts, injurious to human health. The recent disaster at Donora called attention to the problem of air pollution by industrial gases and fumes containing sulfur dioxide, arsenic and fluorine, originating from smelters.

Experiences in the environment of some large copper smelters in the Rocky Mountain area attest that human beings are not the only potential victims of toxic industrial wastes released into the atmosphere. Fumes and gases from petroleum refineries are obnoxious to the people living in their environs; their odors are offensive and even nauseating. Such fumes contribute to the formation of the "smog" encountered in the Los Angeles area and give rise to irritation of the eyes and the respiratory tract. Coke ovens and other industrial plants are a source of excessive production of soot and sulfur dioxide from the burning of coal. Considerable amounts of soot are released into the air during the production of carbon black from natural gas or mineral oil and during the burning of waste oil residues near oil refineries. The potential carcinogenic properties of soot are well established by numerous animal experiments and are supported by the occurrence of cancer of the skin in chimney sweeps. Apparently health hazards of various types exist for the population living in the immediate environment of other industrial establishments through air pollution with wastes.

Prolonged sterilization of the soil has been produced by the deposition of arsenicals from smelter fumes or as insecticides. In a few instances such soil pollution by arsenic-containing industrial wastes has resulted in the contamination of the drinking water supply with toxic amounts of arsenicals. The extensive pollution of rivers and lakes with industrial wastes and urban unprocessed sewage has converted many bodies of public water into unwholesome cesspools, dangerous to any form of life dependent on them as normal environment or for water supply.

People are usually slow in reacting forcefully and effectively to gradually developing conditions injurious to health and survival. Some acute disaster is needed to arouse attention to such environmental health hazards and to force remedial action. The recent Donora disaster served in this role regarding industrial air pollution and brought about the realization, repeatedly voiced at the recent symposium on air pollution held at the Atlantic City meeting of the American Medical Association, that mankind has entered a new world of environmental conditions giving rise to serious health problems. Although acute mass disasters from environmental pollution by industrial wastes are spectacular events because of the number of deaths and diseased persons encountered, such catastrophies occur rather infrequently as the result of unusually massive exposures and are therefore of lesser importance than more widespread and less obvious injuries to health occasioned by the prolonged action of smaller concentrations of the environmental injurious agents on larger population groups. The type and degree of health hazards produced by such exposures is not readily ascertained. Often the symptoms produced are noncharacteristic and may be easily confused with those seen with bacterial infections, nonindustrial allergies or constitutional anomalies. Such insidious and often rather moderate effects on health are of distinct importance at times of more massive exposures, since they lower the resistance of the exposed persons to the higher doses and thereby tend to cause more severe reactions than those that might be elicited in persons not preconditioned by previous contact with low doses of the injurious environmental agents. The extent to which such predisposing factors have been active may determine to a large degree the severity of the reactions and of the disaster seen with massive transitory exposures.

## PHOTOFLUOROGRAPHY IN GASTRIC CARCINOMA

Recent statistical studies by Dorn,[1] quoted by Roach and his associates,[2] indicate that gastrointestinal cancer develops in approximately 60,000 men and 42,000 women above the age of 40 each year in the United States. Of these more than one half die within one year of the time that the diagnosis is made. Persons who do not survive the disease account for nearly half of the deaths resulting from all types of cancer and 5 per cent of the deaths occurring from any cause. In men, nearly 40 per cent of the tumors arising in the digestive system are gastric in origin. In women, 30 per cent of such lesions lie within the stomach. According to Dorn [1] the average length of life following the recognition of the disease is about one year and eight months regardless of therapy. Although surgical treatment is the method of choice in cancer of the stomach, the average five year survival rate of patients operated on is about 5 per cent even when optimum surgical methods are employed. Pack [3] has found that approximately 50 per cent of patients who have gastric cancer are inoperable when the disease is first diagnosed. Of the remainder almost one half present unresectable lesions. Thus only 25 per cent of persons with gastric cancer have any chance of benefit from surgical intervention. Of these, one third do not survive operation, and of those who do recover over two thirds die from recurrent disease or from other causes within a few years. Thus the average five year survival rate for patients with gastric cancer shrinks to 5 per cent.

If surgical intervention is to achieve better results the recognition of the disease must occur early in its development. Roach and his associates believe that the early diagnosis of gastric cancer is a problem of finding those asymptomatic persons in the general population who have the disease. The roentgenologic method constitutes today the most reliable diagnostic procedure for the examination of the stomach. Gastroscopy and examination of the gastric contents for malignant cells according to the method of Papanicolaou are helpful but not of practical value when large numbers of persons are to be examined. Furthermore, both gastroscopy and aspiration are cumbersome and unpleasant methods so far as the patient is concerned. Roentgenoscopy and roentgenography are slow procedures requiring prolonged services of a highly trained physician. These methods therefore are impractical for mass examination of the stomach. Roach and his co-workers point out that photofluorography, which has been so successful in the early detection of pulmonary lesions, offers the advantages of being inexpensive and rapid in execution and not requiring the services of a fluoroscopist. The disadvantages of the method, such as the excessively large doses of radiation that until now have been necessary to produce satisfactory photofluorograms, have now been overcome by the application of Schmidt optics to photofluorographic camera equipment. Utilizing a camera of the Schmidt type, one can now make photofluorograms of the stomach with a little more exposure than that used in conventional roentgenography. The application of Schmidt optics to photofluorography by the Danish engineer Helm resulted in the development of two cameras, one using 35 mm. perforated film and the other using 70 mm. perforated film. Models of both cameras have been brought to the United States by the Tuberculosis Control Division, United States Public Health Service. Morgan and his associates [4] point out that the principal advantage of cameras of the Schmidt type is their greater speed. Thereby power requirements for the roentgen ray generator are lessened, tube life is extended and radiation dosage to the patient is reduced. The cameras may be used for cineroentgenography and photofluorography of such structures as the abdomen, the gastrointestinal tract and the osseous system.

The reliability of gastric photofluorography is under test by Roach and his co-workers, who have established a pilot survey at the Johns Hopkins Hospital in which all patients above the age of 40 who are admitted to the dispensary outpatient clinic of the hospital during the course of the study will be examined photofluorographically for gastric changes. These authors point out that according to recent statistics one may expect to find only 1 man with gastric cancer in every 700 men studied; in women, the expectant prevalence of the disease is 1 in every 1,200. It is anticipated that within each year of the study between 5,000 and 10,000 patients will be examined and that a minimum of six to twelve gastric carcinomas will pass through the unit. The number of persons whom one may expect to find with carcinoma of the stomach in general population groups of men and women above 40 is approximately 1 in 900. While such an incidence may seem small, in reality it is only slightly less than that of significant pulmonary tuberculosis among the general population, which is 1 in 300 to 500. The survey will cover approximately five years. During this time all patients with abnormal photofluorograms will be restudied with conventional roentgenoscopic technics. Those who present changes suggesting gastric cancer will be operated on. A group of approximately 1,000 asymptomatic persons will be examined photofluorographically for gastric changes at intervals of six months. From this study an estimate of the interval at which photofluorographic examinations should be repeated in the general population may be determined.

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[1] Dorn, H. F.: Illness from Cancer in the United States, Pub. Health Rep. **59**: 33, 65 and 97, 1944.

[2] Roach, J. F.; Sloan, R. D., and Morgan, R. H.: The Detection of Gastric Carcinoma by Photofluorographic Methods: I. Introduction, Am. J. Roentgenol. **61**: 183 (Feb.) 1949; II. Equipment Design, Am. J. Roentgenol. **61**: 188 (Feb.) 1949.

[3] Pack, G. T.: Radical Surgical Treatment of Gastric Cancer, J. Nat. Cancer Inst. **7**: 337 (April) 1947.

[4] Morgan, R. H.; Gould, D. M., and VanAllen, W. W.: Two Danish Photofluorographic Cameras of the Original Schmidt Type: III., Am. J. Roentgenol. **59**: 416 (March) 1948.

### FATE OF INSULIN IN THE NORMAL AND DIABETIC ORGANISM

Little has been known of the ultimate fate of insulin in the human organism. Obviously, insulin is constantly being eliminated; otherwise cumulative effects manifested by periods of severe hypoglycemia would be observed even in normal subjects. As is well known, however, the blood sugar level is maintained remarkably constant in normal persons. At least two different methods of disposing of insulin appear possible: one by excretion in the urine or possibly feces (via bile) and the other by destruction in the body. The first route, that of excretion, would not appear to be of major importance. The elimination of protein molecules as large as that of insulin (molecular weight 35,000) seldom takes place to any significant extent in the normal kidney and probably not in the bile or feces. Support for this statement is to be found in a recent study[1] in which it was reported that the urine of normal human subjects contains slightly less than 1 unit (0.66 plus or minus 0.04) of insulin per day. Moreover, persons with mild diabetes who were not receiving insulin excreted even less insulin daily and either normal or diabetic subjects given exogenous insulin excreted only minute amounts.

The Ohio investigators also reported the interesting observation that insulin-resistant patients who received large amounts of exogenous insulin appeared to excrete even less insulin in the urine than normal or diabetic subjects. This observation may be significant in elucidating the etiologic aspects of the disease. The foregoing studies thus appear to warrant the conclusion that urinary excretion is not an important pathway for the metabolic disposal of insulin.

Further studies by the Cincinnati group,[2] however, have furnished more definite information on this subject. Aqueous extracts of certain tissues of various animals and man were found to destroy insulin rapidly on incubation. The liver was particularly rich in the substance, and kidney and muscle contained smaller amounts. None was found in brain, whole blood or plasma. As the insulin-inactivating substance was found to be thermolabile and to be inactivated by typical enzyme inhibitors, the investigators believe that the substance is an enzyme and have suggested the name "insulinase." In further studies, fasting produced a definite reduction in the insulinase activity of the liver (rat) just as others have shown to be true of the insulin content of the pancreas. This suggests a relationship between insulin secretion by the pancreas and insulinase secretion by the liver so that a delicate balance between the two may be maintained. The work also suggests that the destruction of insulin by insulinase, particularly in the liver, is the primary means of the disposal of insulin in the animal organism. Further studies on this interesting and important problem may well prove of value in elucidating the etiology of obscure diseases of carbohydrate metabolism such as insulin resistance.

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[1] Mirsky, I. R.; Podore, C. J.; Wachman, J., and Broh-Kahn, R. H.: J. Clin. Investigation 27: 515, 1948.

[2] Mirsky, I. A., and Broh-Kahn, R. H.: Arch. Biochem. 20: 1, 1949. Broh-Kahn, R. H., and Mirsky, I. A.: ibid. 20: 10, 1949.

## Current Comment

### SENATE REJECTS REORGANIZATION PLAN NO. 1

The United States Senate on August 16 voted 60 to 32 to pass the Fulbright-Taft resolution, S. 147, which rejects the President's Reorganization Plan No. 1. The senators who voted for the resolution were well aware that the health of the public could not be adequately served by a subsidiary section of an elevated Department of Welfare. Apparently the intensive drive made by the present Federal Security Administrator in behalf of nationalized medicine influenced the Senate against the measure which would have made him supreme over government medical services. The Senate, it is reported, resisted heavy executive and political pressure in taking this decisive action.

### AUREOMYCIN TREATMENT OF AMEBIASIS

In treating several cases of bacterial infection with aureomycin, McVay[1] and his associates of the University of Tennessee noted alterations in the gross character of the stools. There was a definite reduction in the fecal bacterial count. This local effect led them to test the possible value of aureomycin in the treatment of amebiasis, then prevalent in the Memphis area. Thus far 14 patients with amebiasis have been treated with aureomycin. In a typical case both trophozoite and cystic forms of Endamoeba histolytica were found in the stools of a patient suffering from paraumbilical pain, abdominal fulness and constipation. The patient was given 6.75 grains (439 mg.) of aureomycin orally in divided doses over a period of three days, at the end of which time his stools had become normal. The treatment was continued until the patient had been given a total of 21.75 grains (1,414 mg.) of aureomycin. During treatment the aureomycin blood level reached 8 micrograms per hundred cubic centimeters and all gastrointestinal symptoms disappeared. Results of fourteen subsequent stool examinations over a period of three weeks have been negative. McVay believes that a much larger number of cases with adequate follow-up will be necessary before a final evaluation can be made of the value of aureomycin in the treatment of amebiasis. The high aureomycin blood level observed in his cases leads him to believe that aureomycin therapy will be successful in extraintestinal amebic infections, such as hepatic abscess.

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[1] McVay, L. V.; Laird, R. L., and Sprunt, D. H.: Science, 109: 590 (June 10) 1949.

# ORGANIZATION SECTION

## *Washington Letter*

*(From a Special Correspondent)*

Aug. 22, 1949.

### Hearings for McCarthy's Department Bill

Shortly after the Senate's defeat of President Truman's plan for a Department of Welfare, an official spokesman for the Senate Expenditures Committee disclosed that public hearings might be scheduled in the near future on S. 2060. This is the bill, sponsored by Senator Joseph R. McCarthy (R. Wis.), which would establish a Department of Health, Education and Security. It is identical to S. 140, on which hearings were held in 1947.

Meantime, in view of the lateness of this session of Congress, it is doubtful whether the Administration will press for enactment of H. R. 782, which would set up a Department of Welfare along lines of the defeated Reorganization Plan No. 1. Capitol observers believe, however, that, if the Senate Expenditures Committee goes through with its plans for hearings on S. 2060, witnesses supporting Administration policies will revive the House bill and urge its enactment over the McCarthy measure.

### Plans Advance for Lobbying Investigation

That there will be a congressional investigation of lobbying activities appears to be reasonably certain, although whether it will be conducted jointly by Senate and House or by the House alone is still in doubt. The House has passed a resolution which provides that the inquiry shall be conducted by a select committee of seven representatives appointed by the Speaker. Meantime, however, the Senate has under consideration a separate resolution, favorably reported by its Rules Committee, which calls for the investigation to be held by a committee of five Senators and five representatives who would be appointed by the chairmen of the Senate and House judiciary committees.

### School Health Services Bill Ensnarled in Committee

The House Interstate and Foreign Commerce Committee conducted several executive sessions the third week in August in an attempt to agree on changes in the school health services bill (S. 1411), which passed the Senate last April. However, a final draft was not achieved and further meetings were to be held. Under consideration also by the same committee is legislation on federal aid for local public health units and liberalization of the Hill-Burton Hospital Survey and Construction Act. The former has been favorably reported to the Senate, and the hospital bill was passed by the Senate August 9.

### Increased Funds for W.H.O. Approved

Awaiting action on the House calendar is H. J. Res. 334, one of the provisions of which is to raise the ceiling on this country's annual contribution to World Health Organization to $3,000,000. At present it is $1,920,000. The resolution was favorably reported to the House in mid-August by the Foreign Affairs Committee. Its sponsor is Representative Thomas E. Morgan (D., Pa.), a physician. Among those who presented arguments in behalf of the larger appropriation was Dr. James R. Miller, Hartford, Conn., who served as a member of the United States delegation to the Second World Health Assembly in Rome last June.

### Murray Subcommittee Approves Three Federal Security Agency Bills

The Senate subcommittee on health matters, of which Senator James E. Murray (D., Mont.) is chairman, has approved three bills pertaining to Federal Security Agency administrative policies and forwarded them to the Labor and Public Welfare Committee. They are S.1706, S.2227 and S.2228. In that order, they clarify eligibility of persons living in the Virgin Islands for admittance to St. Elizabeth's Hospital, the federal institution for mental diseases in the District of Columbia; provide for reallocation of venereal disease rapid treatment facilities, and authorize acceptance by Public Health Service hospitals of certain patients committed by state courts.

### Efforts Pushed to Rescind Cutback in Veterans Hospitals

Representatives John Rankin (D., Miss.) and Charles E. Bennett (D., Fla.) are the latest to attempt to have Congress direct the Veterans Administration to abandon its plans for a 16,000 bed cutback in its hospital construction program. Both have introduced bills to that effect. On the other side of Capitol Hill, the leader in the campaign for restoration of the original construction program is Senator Claude Pepper (D., Fla.). The second and last volume of testimony presented at public hearings last spring on the cutback is now available and may be obtained from the Senate Labor and Public Welfare Committee.

## *Coming Medical Meetings*

Aero Medical Association, New York, Aug. 29-Sept. 2. Dr. Thomas H. Sutherland, 214 S. State St., Marion, Ohio, Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 9-14. Dr. W. L. Benedict, 100 First Avenue Bldg., Rochester, Minn., Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., The Homestead, Sept. 8-10. Dr. Leroy A. Calkins, University of Kansas Medical Center, Kansas City 3, Kan., Secretary.

American College of Surgeons, Chicago, Stevens Hotel, Oct. 17-21. Dr. Paul B. Magnuson, 40 E. Erie St., Chicago 11, Secretary.

American Congress of Physical Medicine, Cincinnati, Netherlands Plaza Hotel, Sept. 6-10. Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secretary.

American Hospital Association, Cleveland, Sept. 26-29. Mr. George P. Bugbee, 18 East Division St., Chicago, Executive Secretary.

American Roentgen Ray Society, Cincinnati, Oct. 4-7. Dr. H. Dabney Kerr, University Hospitals, Iowa City, Iowa, Secretary.

American Society of Clinical Pathologists, Chicago, Drake Hotel, Oct. 11-15. Dr. C. G. Culbertson, 740 S. Alabama St., Indianapolis, Secretary.

Colorado State Medical Society, Denver, Shirley-Savoy Hotel, Sept. 20-23. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver, Executive Secretary.

Delaware, Medical Society of [illegible] Dr. W. Edwin Bird, 822 North American [illegible] Secretary.

District of Columbia, Medical [illegible] Hotel Statler, Oct. 17-19. Mr. Theodore [illegible] Washington 6, Secretary.

Gulf Coast Clinical Society, Pensacola, Fla., Oct. 6-7. Dr. Arthur J. Butt Jr., 1101 N. Palafox St., Pensacola, Fla., Secretary.

Indiana State Medical Association, Indianapolis, Sept. 26-29. Mr. Ray E. Smith, 1021 Hume-Mansur Bldg., Indianapolis 4, Executive Secretary.

International Neurological Congress, Paris, France, Sept. 5-10. Dr. Raymond Garcin, 19 rue de Borgogne, Paris, General Secretary.

Kansas City Southwest Clinical Society, Kansas City, Mo., Municipal Auditorium, Oct. 3-6. Dr. W. Merritt Ketchum, 630 Shukert Bldg., Kansas City, Mo., Secretary.

Kentucky State Medical Association, Owensboro, Oct. 6-9. Dr. Bruce Underwood, 620 S. Third St., Louisville 2, Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel and Civic Auditorium, Sept. 21-23. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Medical Society, St. Louis, Jefferson Hotel, Sept. 28-30. Dr. Harold Swanberg, 209-224 W. C. U. Bldg., Quincy, Ill., Secretary.

Neurological Society of America, Quebec, Canada, Chateau Frontenac, Oct. 17-19. Dr. Edward Schlesinger, 710 W. 168th St., New York, Secretary.

Nevada State Medical Association, Elko, Sept. 29-Oct. 1. Dr. Roland W. Stahr, 118 California Ave., Reno, Secretary.

Northern Minnesota Medical Association, Alexandria, Sept. 9-10. Dr. C. L. Oppegaard, Crookston, Secretary.

Oregon State Medical Society, Eugene, Oct. 12-15. Dr. Werner E. Zeller, Medical-Dental Bldg., Portland 5, Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, Hotel William Penn, Sept. 26-29. Dr. W. F. Donaldson, 8104 Jenkins Arcade, Pittsburgh 22, Secretary.

Southern Minnesota Medical Association, Red Wing, Sept. 12. Dr. W. A. Merritt, 102 Second Ave. S.W., Rochester, Secretary.

Southwestern Surgical Congress, Houston, Tex., Shamrock Hotel, Sept. 26-28. Dr. C. R. Rountree, 1200 N. Walker St., Oklahoma City, Secretary.

Utah State Medical Association, Salt Lake City, Sept. 1-3. Dr. Ray T. Woolsey, 42 S. Fifth East St., Salt Lake City 2, Secretary.

Vermont State Medical Society, Burlington, Sept. 8-9. Dr. James P. Hammond, 542 Main St., Bennington, Secretary.

Virginia, Medical Society of, Fort Monroe, Old Point Comfort, Oct. 9-12. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond, Sechetary.

Washington State Medical Association, Seattle, Olympic Hotel, Sept. 11-14. Dr. James W. Haviland, 338 White-Henry-Stuart Bldg., Seattle, Secretary.

Western Orthopedic Association, Santa Barbara, Calif., Biltmore Hotel, Oct. 19-21. Dr. Charles W. Gilfillan, 1680 N. Vine St., Hollywood, Calif., Secretary.

Wisconsin, State Medical Society of, Milwaukee, Hotel Schroeder and Milwaukee Auditorium, Oct. 3-5. Mr. Charles H. Crownhart, 704 E. Gorham St., Madison, Secretary.

World Medical Association, General Assembly, London, Eng., Oct. 10-15. Dr. Louis H. Bauer, 2 E. 103d St., New York City, Secretary General.

Wyoming State Medical Society, Casper, Sept. 12-14. Dr. George H. Phelps, 1606 Capitol Avenue, Cheyenne, Secretary.

# GOVERNMENT SERVICES

## PUBLIC HEALTH SERVICE

### HISTORY OF PLAGUE IN THE U. S.

The communicable disease center at Atlanta, an agency of the U. S. Public Health Service, has published in its bulletin an illustrated history of plague in the United States, along with other articles on the treatment and control of plague. The following chart, including that of Hampton's in *Public Health Reports* of Nov. 16, 1945, shows the number of cases and deaths from plague up through 1947.

| YEAR | CASES | | | | | | | | | TOTALS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CALIF. | WASH. | LA. | FLA. | TEX | OREGON | UTAH | NEV. | IDAHO | CASES | DEATHS |
| 1900 | 22 | | | | | | | | | 22 | 22 |
| 1901 | 30 | | | | | | | | | 30 | 26 |
| 1902 | 41 | | | | | | | | | 41 | 41 |
| 1903 | 17 | | | | | | | | | 17 | 17 |
| 1904 | 10 | | | | | | | | | 10 | 8 |
| 1905-06 | | | | | | | | | | 0 | 0 |
| 1907 | 178 | 3 | | | | | | | | 181 | 90 |
| 1908 | 8 | | | | | | | | | 8 | 5 |
| 1909 | 3 | | | | | | | | | 3 | 1 |
| 1910 | 3 | | | | | | | | | 3 | 1 |
| 1911 | 4 | | | | | | | | | 4 | 1 |
| 1912 | | | | | | | | | | 0 | 0 |
| 1913 | 2 | | | | | | | | | 2 | 2 |
| 1914 | 1 | | 30 | | | | | | | 31 | 10 |
| 1915 | 1 | | 1 | | | | | | | 2 | 1 |
| 1916-18 | | | | | | | | | | 0 | 0 |
| 1919 | 13 | | 15 | | | | | | | 28 | 18 |
| 1920 | 1 | | 7 | 10 | 33 | | | | | 51 | 27 |
| 1921 | 3 | | 3 | | | | | | | 6 | 4 |
| 1922 | 2 | | | | | | | | | 2 | 0 |
| 1923 | 1 | | | | | | | | | 1 | 0 |
| 1924 | 41 | | | | | | | | | 41 | 34 |
| 1925 | 1 | | | | | | | | | 1 | 0 |
| 1926 | | | | | | | | | | 0 | 0 |
| 1927 | 1 | | | | | | | | | 1 | 1 |
| 1928 | 3 | | | | | | | | | 3 | 2 |
| 1929-32 | | | | | | | | | | 0 | 0 |
| 1933 | 1 | | | | | | | | | 1 | 1 |
| 1934 | 1 | | | | | 1 | | | | 2 | 1 |
| 1935 | | | | | | | | | | 0 | 0 |
| 1936 | 3 | | | | | | 1 | | | 4 | 0 |
| 1937 | 1 | | | | | | | 1 | | 2 | 1 |
| 1938 | | | | | | | | | | 0 | 0 |
| 1939 | | | | | | | 1 | | | 1 | 0 |
| 1940 | | | | | | | | | 1 | 1 | 1 |
| 1941 | 2 | | | | | | | | | 2 | 2 |
| 1942 | 1 | | | | | | | | | 1 | 0 |
| 1943 | 1* | | | | | | | | | 1 | 1 |
| 1944 | 1 | | | | | | | | | 1 | 0 |
| 1945-46** | | | | | | | | | | 0 | 0 |
| TOTAL | 397 | 3 | 56 | 10 | 33 | 1 | 2 | 1 | 1 | 504 | 318 |

* Case acquired in laboratory

** 1945-1946 data from Public Health Reports for 1945, 1946, and 1947. One case occurred in California in 1947

CASES OF, AND DEATHS FROM, PLAGUE IN THE UNITED STATES (HAMPTON, 1945)

### DR. VELDEE RETIRES

Dr. Milton V. Veldee, who had been detailed for twenty years to the National Institute of Health, is now on terminal leave in anticipation of his retirement. His various assignments during the years included service with the American Red Cross in Russia in 1920, medical advisor to the American Consul in Denmark and chief of the Laboratory of Biologics Control since 1931 of the National Institute of Health. His successor at the Institute is Dr. William G. Workman, who also has been with the institute for many years. Dr. Workman was a consultant in preventive medicine to the U. S. Army in Korea and Japan, and an advisor to the military governments in those countries in 1946. At present he is a consultant at the Research and Development Board of the National Military Establishment.

### EXAMINATION OF IMMIGRANTS

On July 25, Senior Surgeon Ralph Gregg, assistant chief of the Division of Foreign Quarantine, flew to Europe for a month's inspection of the service offices where applicants for United States immigration visas undergo medical examination. Dr. Gregg was accompanied in Europe by Medical Director Lynne A. Fullerton, who is assigned to the American Embassy in Paris as supervisor of the service's immigration medical work in Europe.

Public Law 774 of 1948 authorizes immigration of 205,000 displaced persons in a two year period. Public Health Service officers serve as medical examiners and report applicants with disease excludable under immigration laws (mental diseases, tuberculosis in any form, contagious diseases and physical defects which may affect ability to earn a living).

Dr. Frank M. Faget is completing thirty-five years' service as medical officer with the Public Health Service and will retire Nov. 1, 1949. Dr. Faget, now on terminal leave, has been medical officer in charge of the Portland (Maine) Marine Hospital for the last two years. Succeeding him in that post is Dr. P. D. Mossman, formerly medical officer in charge at the Seattle Marine Hospital.

### DR. KINSEY APPOINTED PHARMACIST DIRECTOR

Dr. Raymond Kinsey has been appointed to the rank of pharmacist director of the Public Health Service. Dr. Kinsey is the first pharmacist officer to be appointed to the director grade in the history of the Public Health Service, according to Surgeon General Leonard A. Scheele. The director grade is the equivalent of the full colonel rank in the Army.

### EXAMINATIONS FOR MEDICAL OFFICERS

Examinations will be held October 3-5 for physicians and veterinarians seeking appointment in the Regular Corps of the Public Health Service as medical officers and public health and research veterinarians. Examinations will be held in the following cities: Baltimore, Fort Worth, New Orleans, Memphis, Lexington, Atlanta, Boston, Buffalo, Chicago, Cleveland, Detroit, Los Angeles, San Francisco, Seattle, Denver and Kansas City, Mo., and other cities throughout the country. Applicants have until September 5 to submit their papers. Applications and requests for information should be addressed to the Public Health Service, Federal Security Agency, Washington 25, D. C., Attention: Division of Commissioned Officers.

### PERSONAL

Dr. Alexander D. Langmuir has been appointed chief of the Epidemiology Division of the Communicable Disease Center of the Public Health Service. Dr. Langmuir has begun his duties at the Communicable Disease Center in Atlanta, Ga. Before his appointment Dr. Langmuir was associate professor of epidemiology for three years at the Johns Hopkins University School of Hygiene and Public Health.

# Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

## COLORADO

**State Medical Society Meeting.**—The annual session of the Colorado State Medical Society will be held at the Hotel Shirley-Savoy, Denver, September 20-23, under the presidency of Dr. Casper F. Hegner, Denver. Physicians invited to address the scientific sessions include:

Phillips Thygeson, San Jose, Calif., Recent Advances in Our Knowledge of the Etiology and Treatment of Uvietis.
Edward L. Compere, Chicago, Office Management of the More Common Foot Problems of Children.
Herbert A. Wenner, Kansas City, Kan., Recent Advances in the Research of Poliomyelitis.
Charles H. Slocumb, Rochester, Minn., Rheumatoid Arthritis.
Rubin H. Flocks, Iowa City, Some Aspects of the Etiology and Medical Management of Renal Stone.
Perry P. Volpitto, Augusta, Ga., Anesthesia and Analgesia in Obstetric Labor.
Frank H. Lahey, Boston, Management of Lesions of the Stomach, Duodenum and Jejunum.
Mr. William A. Richardson, Rutherford, N. J., First Year of the British National Health Service.

Scientific and technical exhibits will be displayed. A full color television program will be shown through the courtesy of Smith, Kline and French Laboratories of Philadelphia. The annual banquet and dance will be held Friday evening.

## CONNECTICUT

**Insect Survey.**—Field workers are conducting an insect survey in New Haven, Hartford, New Britain, Meriden and Bridgeport this summer under the direction of scientists from Yale University School of Medicine, New Haven. This is a continuation of a program of work started last year. Representatives are spending several days each week in these cities to trap large quantities of "non-biting flies." The insects are used in connection with the continuing studies of viruses being made under the direction of Joseph L. Melnick, Ph.D., associate professor of microbiology at Yale University and Lawrence R. Penner, Ph.D., assistant professor of zoology and entomology at the University of Connecticut, Storrs. This research is sponsored by the National Foundation for Infantile Paralysis, Inc., but it is a part of Yale University's long range program on the relationship between insects and virus diseases now in its eleventh year. The Connecticut insect survey is also part of a similar nationwide program being undertaken in several states this year.

## ILLINOIS

**Postgraduate Lecture.**—The Scientific Service Committee of the Illinois State Medical Society has arranged a lecture for the St. Clair County Medical Society at East St. Louis September 1, when Dr. Joseph H. Kiefer, Chicago, will speak on "Carcinoma of the Prostate." The Sangamon County Medical Society, meeting in Springfield September 1, will hear Dr. Philip Thorek, Chicago, speak on "Portal Hypertension."

### Chicago

**Grant to Crerar Library for Cancer Collection.**—The Illinois Division of the American Cancer Society has given its second annual grant of $1,500 to the John Crerar Library to increase its collection of cancer literature. All volumes in this collection are available to physicians and scientists specializing in the disease. The library now has about 90 per cent of all journals of current importance in the cancer field and through the proceeds of the grant hopes to accomplish close to complete coverage of cancer literature.

**Dr. Adams Heads Department of Medicine.**—Dr. Wright R. Adams, professor of medicine and associate dean of the Division of Biological Sciences at the University of Chicago, has been appointed chairman of the department of medicine. He will succeed Dr. Lowell T. [illegible] gned as chairman of the department of [illegible] vote full time to his post as dean of the [illegible] Sciences and to his research work in internal medicine and tropical diseases. Dr. Adams, a graduate of the University of Illinois College of Medicine, 1929, has been a member of the cardiac department of the University of Chicago Clinics since his appointment to the university in 1930. From 1928 to 1930 he was an intern at St. Luke's Hospital and in 1930 a volunteer in pathology at Cook County Hospital.

**Research Grants Awarded.**—Five research grants totaling $21,460 have been awarded to the University of Illinois College of Medicine. The Chicago Heart Association granted $10,000 to Dr. Carl C. Pfeiffer in the department of pharmacology for the study of the effects of stress and diet on the regulation of the flow of blood into the kidneys. The National Cancer Institute has renewed a grant of $5,940 for a study involving dyes and cancer of the stomach being conducted by Drs. Andrew C. Ivy and Francis T. Flood. A $2,500 grant has been received from the Roche Foundation in support of a research fellowship involving a continuation of the study of curare-like drugs, under the supervision of Dr. Klaus R. Unna. Abbott Laboratories has made a grant of $2,120 for a study of a synthetic sweetening agent which does not have caloric value, being conducted by Dr. Morton I. Grossman and Miss Charlotte Robertson. Hoffman-LaRoche Inc., has awarded a grant of $900 to subsidize pain tests involving the study of analgesic drugs, under the direction of Dr. Pfeiffer.

**Personals.**—Dr. James L. Fleming, obstetrician and gynecologist for 46 years, and Dr. George F. Thompson, a surgeon for 50 years and now chairman of the hospital surgical department, were given a testimonial dinner by the attending staff of St. Anne's Hospital June 15.——Dr. Frederick Steigmann, associate director in charge of clinical investigation, Hektoen Institute for Medical Research, has been appointed area consultant in gastroenterology to the Veterans Administration Hospitals in the Middle and Northwestern states.——Municipal Judge Jacob M. Braude has been appointed to succeed Dr. Anton J. Carlson as president and chairman of the Chicago Committee on Alcoholism. Dr. Carlson has been elected honorary president for life.——The distinguished service award of the University of Kansas, Kansas City, was presented to Dr. Warren H. Cole, professor of surgery at the University of Illinois College of Medicine, at recent graduation and alumni exercises. The award is presented annually by the university through its alumni association to graduates for distinguished service. Dr. Cole received the bachelor of science degree from Kansas in 1918. A year ago Dr. Cole served as Senior Scientist Attache for the United States mission to Britain for Science and Technology, which was conducted under the jurisdiction of the Department of State.

## IOWA

**Stream Pollution Law.**—Iowa has passed a new stream and lake pollution law giving the state department of health power to prevent pollution of the state's lakes and streams before it occurs. The law, effective July 4, states among other things that a permit must be issued before the building of a new sewer or a change is made in an existing plant which will empty into a stream or lake. It also requires treatment of domestic sewage and planning for proper disposal of pollutional industrial wastes before they are produced. The original law controlling stream pollution did not authorize the Iowa State Department of Health to prevent new pollution but merely to clean up the pollutional condition after it had occurred.

## KANSAS

**Kansas Division of Cancer Society Awards.**—Six awards will be made for scientific investigation, two each of $500, $300 and $100, by the Kansas Division of the American Cancer Society for work in fields related to growth, cause, diagnosis or treatment of cancer which has been done in the state. Contestants will be divided into two groups, those who have not received a doctorate degree and those who have received a doctorate degree since June 1944. All manuscripts should be submitted in triplicate, the author's name and address appearing on a separate sheet of paper. Further information may be secured from the Kansas Division of the American Cancer Society, 506 New England Building, Topeka, Kansas.

## KENTUCKY

**County Healthmobile Report.**—The Louisville-Jefferson County Board of Health Healthmobile has aided 1,201 county residents during its first six months of operation. According to Dr. David E. Booker, director of clinics, total visits numbered 2,224, of which 324 were infants; 1,456, preschool children; 298, school children; 84 morbidity and 55 prenatal cases.

**Personals.**—Dr. J. Duffy Hancock, Louisville, has been named Kentucky representative on the newly created council of the Southeastern Surgical Congress.——Dr. Ralph S. Metheny, Louisville, who is chief of medicine at Nichols General Hospital, will become manager August 21 of the new 200 bed Veterans Administration Hospital at Altoona, Pa. Dr. Ronald R. Kaplan, a 1932 graduate of the University of Louisville School of Medicine who is now in charge of the hospital's outpatient department, will be Dr. Metheny's successor.

## MARYLAND

**State Academy of General Practice Meeting.**—The first assembly of the Maryland Academy of General Practice will be held September 29 in Hagerstown. Out of state speakers include:

George M. Lyon, Washington, D. C., Radioactive Isotopes in Clinical Medicine.
Thomas H. McGavack, New York, Diseases of the Thyroid.
John B. Montgomery, Philadelphia, Office Gynecology.
Edward Scott O'Keefe, Lynn, Mass., A High Caloric Diet in the Treatment of Diarrhea in Infancy.
LeRoy H. Sloan, Chicago, Changing Patterns of Disease.

## MICHIGAN

**State Medical Society Meeting.**—The annual session and postgraduate conference of the Michigan State Medical Society will be held in the Pantlind Hotel and Civic Auditorium in Grand Rapids, September 21-23. Physicians addressing the general sessions by invitation include:

Dallas B. Phemister, Chicago, Treatment of Osteomyelitis as Modified by Antibiotic and Chemotherapy.
Arthur R. Colwell, Evanston, Ill., Types of Diabetes Mellitus and Their Management.
John S. Lundy, Rochester, Minn., The Anesthesiologist Is Prepared to Anesthetize the Surgical Patient, to Aid in Differential Diagnosis of Pain Paths and to Resuscitate the Patient.
Earl D. Osborne, Buffalo, Diagnosis and Treatment of Cutaneous Malignancy.
Warren E. Wheeler, Columbus, Ohio, Pulmonary Infections with Histoplasma in Children.
Edwin Davis, Omaha, Pitfalls in Urological Diagnosis.
Joseph L. Baer, Chicago, Prolonged Labor.
Arthur P. Stout, New York, Cancer of the Stomach.
John M. Waugh, Rochester, Minn., Surgical Management of Malignancy of the Ampullary Region.
Frederick H. Falls, Chicago, Early Diagnosis of Carcinoma of the Uterus.
Ralph J. McQuiston, Indianapolis, Deep Infections of the Neck.
Herbert C. Miller Jr., Kansas City, Kan., Effect of Prenatal Factors on Survival of Newborn Infants.
John E. Gordon, Boston, A New Principle in the Control of Communicable Diseases.
Robert M. Zollinger, Columbus, Ohio, Indications for Surgery in Gallbladder Disease.
Edward C. Reifenstein Jr., Syracuse, N. Y., Use of Steroid Hormones in Bone Disease of Aging People.
Ralph O. Rychener, Memphis, Tenn., Glaucoma in General Practice.
William J. Dieckmann, Chicago, Indications and Methods for Terminating Pregnancy in the Last Trimester.
Max Thorek, Chicago, Impending Death Under Anesthesia.
William B. Castle, Boston, Basic Principles in the Treatment of Blood Dyscrasias.
Joseph E. Moore, Baltimore, Recent Advances in the Study of Venereal Diseases.
Harry E. Bacon, Philadelphia, Diagnosis and Treatment of Common Diseases of the Anorectum.
Franklin G. Ebaugh, Denver, Iatrogenicity in Medicine.
Arnold S. Jackson, Madison, Wis., Acute Surgical Abdomen.
Robert L. Jackson, Iowa City, Importance of Breast Feeding.
Ursus V. Portmann, Cleveland, Cancer of the Breast.
Robert E. Gross, Boston, Surgical Treatment for Coarctation of the Aorta.
John P. Peters, New Haven, Conn., Causes and Treatment of Lower Nephron Nephrosis.

Section meetings will be held at noon. An added feature of the meeting will be the postsession "Cancer Day" scheduled for Saturday, September 24. Technical and scientific exhibits will be shown.

## MISSOURI

**State Board of Medical Examiners.**—At a recent meeting of the Missouri State Board of Medical Examiners the following members were selected to serve for one year: Drs. William O. Finney, Chaffee, president; Walter L. Brandon, Poplar Bluff, secretary-treasurer; Edwin C. White, Kansas City; Howard B. Goodrich, Hannibal, and Francis T. H'Doubler, Springfield.

## NEW YORK

**Personals.**—Dr. Harold Buckbee of Dolgeville was named president of the New York State Public Health Officers Organization at its annual meeting.——Dr. William Thalhimer, New York, has been appointed assistant pathologist and medical examiner at the department of laboratories and research of Westchester County located in Grasslands Hospital, Valhalla.

**Dr. Evans Appointed to State University.**—President Alvin C. Eurich, Ph.D., of the State University of New York on August 15 announced the appointment of Dr. Lester J. Evans as consultant in medical education to the state university. Dr. Evans, medical associate of the Commonwealth Fund, will assume his duties immediately and will continue with the Commonwealth Fund on a part time basis. He will assist in formulating plans for the establishment of the over-all university medical education program. Dr. Evans has been associated with the Commonwealth Fund program for twenty-six years, starting in 1923 as medical director of its child health demonstration activities in Fargo, N. D. Since 1928 he has been a member of the staff at its executive offices in New York City. In his early years with the fund Dr. Evans worked in the fields of preventive medicine, rural hospitalization and rural public health. More recently his primary concerns have been with the supervision of grants for medical education and research. He is a graduate of the School of Medicine of Washington University in St. Louis. He spent two years in graduate pediatric training at the St. Louis Children's Hospital before joining the Commonwealth Fund.

### New York City

**Offer Hospital Facilities for Study.**—Queens General Hospital is opening its wards and clinics to doctors of the county for teaching purposes. It is hoped that physicians who do not have hospital appointments will be the first to avail themselves of this opportunity for study. The plan was inaugurated July 6 at the regular monthly conference of the department of medicine. The schedule included clinics, conferences, seminars, lectures and demonstrations as well as formal war rounds. Dr. Arthur A. Fischl, president of the Medical Society of the County of Queens, stated that the medical society has long advocated such a relationship and has pledged active support of its graduate education committee.

**Dr. Most to Head Research in Tropical Medicine.**—Dr. Harry Most, associate professor of preventive medicine, has been appointed a full professor of preventive medicine at New York University College of Medicine, a unit of the New York University-Bellevue Medical Center, effective September 1. Dr. Most will continue to be in direct charge of the New York University-Bellevue Medical Center's expanding program of tropical medicine. He will be in charge of a tropical disease diagnostic clinic currently undergoing formation by the New York City Health Department in the Lower East Side District Health Center. Dr. Most, a member of the college faculty for the past ten years, is deputy chief consultant in tropical disease to the Veterans Administration and a member of the National Research Council's Committee on Tropical Disease. He is also consultant in tropical medicine to the surgeon general, U. S. Army, the commissioner of health, New York State, and the marine hospitals of the U. S. Public Health Service.

## NORTH CAROLINA

**Personal.**—Dr. Alfred T. Hamilton has been appointed chief prison surgeon succeeding Dr. Benjamin J. Lawrence, who has held the position for 12 years. Dr. Lawrence is resigning to devote more time to his own practice.

**Symposium on Medicine.**—The annual symposium of the Duke University School of Medicine, will be held at Durham October 13-15. The general subject will be the "Basis of Disease." Among the guest speakers will be Drs. Stanley E. Bradley, New York City; Daniel E. Clark, Chicago; John H. Dingle, Cleveland; Robert Elman, St. Louis; Paul Klemperer, New York; Joseph L. Lilienthal Jr., Baltimore; Cyril N. H. Long, New Haven, Conn.; William Parsons, Charlottesville, Va.; Hans Selye, Montreal, and Robert W. Wilkins, Boston.

## RHODE ISLAND

**Dr. Magill Named State's Chief Examiner.**—Dr. William H. Magill, Providence, has been appointed to the new post of chief medical examiner of the state. The new system under which twelve county medical examiners will be responsible for examining cases involving violent death or death in suspicious circumstances went into effect July 1. Under the old system there were thirty examiners and an associate examiner. Dr. Magill has been medical examiner in Providence for forty-three years. He personally is charged with performing all autopsies.

## TEXAS

**Gift to Establish Department of Physical Medicine.**—Baylor Hospital, Dallas, recently received a gift of $133,000 from Grady H. Vaughn, Dallas business man and patient at Baylor, to construct and equip a department of physical medicine. The new department will be located on the first floor of the hospital's new Truett Memorial Hospital Building, which is to be constructed.

**University Expands Teaching Facilities.**—Under provisions of a special appropriation by the legislature of the state of Texas, the University of Texas School of Medicine, Galveston, is admitting 162 students to the first year class this fall. Funds have been provided for necessary expansion of teaching facilities and personnel. A new laboratory building, being provided by funds from a special bond issue, will house the departments of bacteriology and parasitology; pharmacology; biochemistry and nutrition, and physiology. It will also provide facilities for an expanded library.

## WEST VIRGINIA

**State Medical Election.**—At the annual meeting of the West Virginia State Medical Association at White Sulphur Springs August 4-6, Dr. Russell B. Bailey of Wheeling was elected president; he will assume duties Jan. 1, 1950. Dr. T. Maxfield Barber, Charleston, was reelected secretary-treasurer for his twenty-third consecutive term. Dr. George F. Evans, Clarksburg, was chosen American Medical Association delegate from West Virginia succeeding Dr. Ivan Fawcett of Wheeling, who has served as one of the two delegates from the state since 1938. The next annual meeting will be held at White Sulphur Springs, July 27-29, 1950.

**Personals.**—Dr. Charles A. Zeller, medical director of the Governor Bacon Health Center, at Delaware City, Del., was appointed superintendent of Weston State Hospital late last spring. Doctor Zeller succeeded Dr. Joseph L. Knapp, who resigned to become associated with the Beverly Hills Sanitarium in Dallas, Texas. The new superintendent, a graduate of the University of Buffalo School of Medicine, has been active in the field of mental health in Delaware, Pennsylvania, Michigan and Indiana.——Dr. Newman H. Dyer of Charleston, state health commissioner, was elected president of the West Virginia University Alumni Association at the annual meeting in Morgantown during commencement exercises in June.——Dr. Walter E. Vest, Huntington, was elected president of the new West Virginia medical licensing board at its organization meeting held July 7 in Charleston.——Dr. James L. Patterson of Logan has been elected president of the West Virginia Chapter of the Medical College of Virginia Alumni Association, succeeding Dr. L. Rush Lambert of Fairmont.

**Survey for Prospective Medical School.**—Dr. Alan Gregg, director of medical science for the Rockefeller Foundation, and Dr. Herman G. Weiskotten, dean of Syracuse (N. Y.) University College of Medicine and chairman of the American Medical Association Council on Medical Education and Hospitals, have been asked to conduct separate surveys concerning the advisability of building and maintaining a four year school of medicine and dentistry in West Virginia. The request for the survey was made by the legislative interim committee in consultation with the citizens advisory committee set up by the 1949 legislature for the purpose of studying the whole medical school question. The meeting of the two groups on August 8 followed closely the state medical association's adopted resolution favoring the establishment of the school as a part of West Virginia University. The question of site for the proposed school was not raised by the state association or the two interim groups. The legislative interim committee will meet with the advisory committee when the proposed impartial surveys have been completed. The groups will submit a report to Governor Patteson prior to the next regular session of the legislature in January 1951.

## WYOMING

**State Medical Meeting.** — The Wyoming State Medical Society will hold its annual meeting September 12-14 at the Townsend Hotel in Casper, under the presidency of Dr. George E. Baker, Casper. Guest speakers include:

Claude F. Dixon, Rochester, Minn., Surgery of the Gallbladder.
Daniel R. Higbee, Denver, Case Selection in Treatment of Carcinoma of the Bladder.
L. Martin Hardy, Chicago, Congenital Abnormalities of the Upper Alimentary Tract.
John W. Huffman, Chicago, Postoperative Pulmonary Complications.
Earl E. Barth, Chicago, Roentgen Findings in Common Pulmonary Lesions.
Frederick W. Fitz, Chicago, Bacterial Pneumonia.
Edgar B. Johnwick, Hot Springs, Ark., Observations on Venereal Disease.

The Woman's Auxiliary will meet in conjunction with the state association.

## ALASKA

**Premarital Examinations.**—Beginning June 17 all applicants for marriage licenses in the Territory of Alaska are required to take a physical examination, including a standard serologic test for syphilis within 30 days before the marriage license is issued. In areas not having the services of a licensed physician an affidavit to that effect will be sufficient proof for a U. S. Commissioner to issue a marriage license.

## GENERAL

**Special Society Election.**—The Western Association of Industrial Physicians and Surgeons at its annual meeting in San Francisco chose the following officers: Drs. Rodney R. Beard, San Francisco, president; R. Christopher Leggo, Crockett, Calif., secretary, and John E. Kirkpatrick, San Francisco, treasurer.

**New Surgical Society.**—The Neurosurgical Society of America was founded June 5, 1948, and incorporated in the State of Illinois the following July. It was formed to stimulate fellowship among young neurosurgeons and to disseminate neurosurgical materials among the group. The requirements for membership must comply with requirements set up by the Board of Neurological Surgery. Officers include Drs. Arthur A. Morris, Washington, D. C., president; Edward R. Schlesinger, New York, secretary, and Irving J. Speigel, Chicago, treasurer. The second annual scientific meeting will be held at the Chateau Frontenac in Quebec October 17-19.

**Veterinarians Recommend Use of Pound Dogs for Research.**—Resolutions favoring the use of pound animals for medical research and training were passed by three veterinary groups in July. These would apply only to animals that would otherwise have been killed. The same resolution has now been passed by the Conference of Veterinary Physiologists and Pharmacologists, the Public Health Section of the American Veterinary Medical Association and the National Association of Federal Veterinarians. The mutually recommended resolution states in part: "Resolved, that dogs and cats that would otherwise be killed in public pounds be made available under suitable regulations for intelligent humane use in teaching and research laboratories."

**Research in Paraplegia.**—A program of laboratory and clinical research on paraplegia was announced in July by the National Paraplegia Foundation, which is sponsored by the Paralyzed Veterans of America. The foundation's work is aimed at the problems of civilian paraplegia; headquarters are in the LaSalle Hotel, Chicago. The first and most important step in the program, according to Gilford S. Moss, executive director of the foundation, is the establishment of fellowships to provide uninterrupted research in physiology and bacteriology. Other aims of the foundation are to draw public attention to the plight of the civilian paraplegic and to work toward his rehabilitation. According to Mr. Moss, there are 33 times more paraplegic civilians than paraplegic veterans in the country today.

**The Childs Memorial Fund.**—The Jane Coffin Childs Memorial Fund for Medical Research during the past year has made grants for support of cancer research projects and fellowship appointments totaling $92,435. Among the largest of the 22 grants are $10,000 to Dr. E. S. Guzman Barron for studies of the metabolism of blood cells and of blood-producing tissues in health and disease; $8,500 to Dr. Samuel C. Harvey, Yale University School of Medicine, New Haven, Conn., for clinical and laboratory studies of cancer; $8,000 to Dr. Eugene L. Opie, Rockefeller Institute for Medical Research, for studies on osmotic and cytologic effects of hepatic tumor-producing diets; $7,500 to Dr. Frances Duran-Reynals, Yale University School of Medicine, for the third year of his present grant for the study of the relation of viruses to tumors.

**Southwestern Surgical Congress.**—The first annual meeting of the Southwestern Surgical Congress will be held at the Shamrock Hotel, Houston, Texas, September 26-28, under the presidency of Dr. Walter G. Stuck, San Antonio, Texas. Physicians invited to speak include: Robert L. Sanders, Memphis, Tenn.; Benjamin T. Beasley, Atlanta, Ga.; Arthur H. Blakemore, New York; Robert M. Moore, Galveston, Texas; Murray M. Copeland, Washington, D. C.; Keith S. Grimson, Durham, N. C.; Francis C. Grant, Philadelphia; H. Earl Conwell, University, Ala.; J. Duffy Hancock, Louisville, Ky.; Karl A. Meyer, Chicago; Brien T. King, Seattle, and J. Dewey Bisgard, Omaha.

A registration fee of $10 will be charged those other than the founders. The society was formed early in 1949.

**Medical Aspects of Crime.**—The Medical Correctional Association, an affiliate of the American Prison Association, desires to contact professional personnel interested in or concerned with the medical aspects of crime. The membership in this association is confined to the following groups: (1) physicians employed in penal and correctional institutions or jails; (2) physicians, social welfare workers and special workers engaged in medical research work in penal correctional institutions and jails; (3) physicians, psychiatrists, psychologists, social workers and special workers engaged in medical research work in connection with (*a*) institutions or hospitals for the mentally ill, (*b*) mentally defective persons, (*c*) juvenile delinquents, (*d*) defective delinquents, (*e*) outpatient or behavior clinics dealing with any aspect of crime or its prevention, (*f*) criminal, juvenile and domestic relations courts, (*g*) parole, (*h*) probation, (*i*) public and private schools, colleges and universities and (*j*) federal, state, county and municipal public health organizations, and (4) any person who presents satisfactory evidence that he or she is engaged in research or an occupation in which the medical aspects of crime are acknowledged as important features. Officers of the association are Dr. Frank J. Curran, Charlottesville, Va., president, and Dr. Edward C. Rinck, Medical Center for Federal Prisoners, Springfield, Mo., secretary-treasurer. Annual dues of $1 should be sent to the secretary.

**Prevalence of Poliomyelitis.**—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service.

| Division and State | Week Ended | | | Jan. 1 to | | Total * | |
|---|---|---|---|---|---|---|---|
| | Aug. 13, 1949 | Aug. 14, 1948 | Median Expec. | Aug. 13, 1949 | Aug. 14, 1948 | March 19-Aug. 13, 1949 | March 20-Aug. 14, 1948 |
| **New England States:** | | | | | | | |
| Maine | 36 | 1 | 1 | 140 | 6 | 140 | 6 |
| New Hampshire | 24 | 2 | .. | 42 | 6 | 42 | 6 |
| Vermont | 3 | 2 | 2 | 17 | 5 | 15 | 4 |
| Massachusetts | 129 | 20 | 20 | 354 | 46 | 354 | 43 |
| Rhode Island | 7 | .. | 1 | 21 | .. | 21 | .. |
| Connecticut | 45 | 10 | 10 | 126 | 40 | 123 | 39 |
| **Middle Atlantic States:** | | | | | | | |
| New York | 539 | 59 | 70 | 1,401 | 314 | 1,381 | 278 |
| New Jersey | 101 | 40 | 21 | 315 | 175 | 279 | 168 |
| Pennsylvania | 41 | 52 | 45 | 135 | 170 | 125 | 159 |
| **East North Central States:** | | | | | | | |
| Ohio | 134 | 82 | 25 | 389 | 316 | 383 | 307 |
| Indiana | 126 | 16 | 16 | 496 | 121 | 486 | 111 |
| Illinois | 299 | 60 | 60 | 898 | 230 | 882 | 223 |
| Michigan | 225 | 41 | 41 | 704 | 126 | 677 | 120 |
| Wisconsin | 84 | 26 | 8 | 256 | 84 | 242 | 84 |
| **West North Central States:** | | | | | | | |
| Minnesota | 142 | 57 | 24 | 592 | 211 | 553 | 203 |
| Iowa | 81 | 36 | 13 | 373 | 234 | 360 | 221 |
| Missouri | 123 | 11 | 5 | 598† | 68 | 587† | 68 |
| North Dakota | 58 | 8 | 8 | 187 | 18 | 183 | 18 |
| South Dakota | 16 | 10 | 1 | 116 | 56 | 94 | 56 |
| Nebraska | 36 | 34 | 23 | 164 | 185 | 151 | 180 |
| Kansas | 56 | 9 | 9 | 307 | 82 | 281 | 79 |
| **South Atlantic States:** | | | | | | | |
| Delaware | 4 | 11 | 5 | 18 | 77 | 16 | 76 |
| Maryland | 7 | 2 | 2 | 48 | 15 | 39 | 14 |
| District of Columbia | 8 | 7 | 7 | 25 | 31 | 24 | 31 |
| Virginia | 26 | 52 | 27 | 108 | 192‡ | 98 | 190‡ |
| West Virginia | 39 | 15 | 5 | 157 | 52 | 150 | 47 |
| North Carolina | 15 | 192 | 7 | 124† | 1,467 | 97† | 1,443 |
| South Carolina | 12 | 31 | 6 | 53 | 181 | 40 | 173 |
| Georgia | 11 | 17 | 8 | 89† | 112 | 81† | 111 |
| Florida | 25 | 13 | 3 | 124 | 145 | 103 | 128 |
| **East South Central States:** | | | | | | | |
| Kentucky | 33 | 9 | 8 | 218 | 84 | 210 | 81 |
| Tennessee | 26 | 27 | 17 | 231 | 136 | 225 | 129 |
| Alabama | 13 | 13 | 8 | 132 | 95 | 119 | 83 |
| Mississippi | 23 | 11 | 5 | 177 | 63 | 166 | 61 |
| **West South Central States:** | | | | | | | |
| Arkansas | 60 | 10 | 2 | 614 | 69 | 603 | 67 |
| Louisiana | 29 | 4 | 4 | 129 | 61 | 117 | 55 |
| Oklahoma | 92 | 28 | 18 | 688 | 170 | 681 | 164 |
| Texas | 109 | 90 | 34 | 1,323 | 1,131 | 1,342 | 1,110 |
| **Mountain States:** | | | | | | | |
| Montana | 5 | 3 | 2 | 21 | 25 | 20 | 15 |
| Idaho | 44 | 6 | 1 | 203 | 74 | 190 | 47 |
| Wyoming | 13 | 5 | 1 | 38 | 35 | 38 | 35 |
| Colorado | 50 | 6 | 6 | 160 | 33 | 158 | 31 |
| New Mexico | 11 | 7 | 2 | 71 | 34 | 70 | 32 |
| Arizona | 18 | 6 | 3 | 62 | 36 | 51 | 35 |
| Utah | .. | 6 | 6 | 68 | 30 | 52 | 27 |
| Nevada | .. | .. | 1 | 10 | 2 | 10 | 1 |
| **Pacific States:** | | | | | | | |
| Washington | 38 | 12 | 12 | 181 | 93 | 136 | 75 |
| Oregon | 6 | 9 | 9 | 75 | 49 | 59 | 33 |
| California | 106 | 241 | 40 | 1,013 | 1,445 | 724 | 1,413 |
| Total | 3,158 | 1,409 | ..... | 13,901† | 8,430‡ | 12,978† | 8,080‡ |
| Median, 1944-1948 | | | 1,016 | 5,008 | | 4,745 | |

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* Last two columns show reported incidence since approximate average seasonal low: 21 weeks.

† Corrections (deducted from cumulative totals): Georgia, weeks ended July 23, 1 case; July 30, 1; August 6, 1; North Carolina, week July 23, 1; Missouri, week ended August 6, 1.

‡ Corrections (deducted from cumulative totals): Virginia, July, 6 cases; August, 3 cases. Not allocated to specific weeks.

**Roentgen Ray Society Meeting.**—The annual meeting of the American Roentgen Ray Society will be held at the Netherland Plaza Hotel, Cincinnati, October 4-7, under the presidency of Dr. Lawrence Reynolds, Detroit. Physicians presenting papers by invitation include:

Robert M. Potter, Chicago, Aid to the Diagnosis of Polypoid Lesions of the Colon.

Charles A. Priviteri, Chamblee, Ga., Gastrointestinal Radiographic Observations of Patients Treated by Vagotomy.

James A. Helmsworth, Johnson McGuire and Benjamin Felson, Columbus, Ohio; Joseph E. Miller, Dallas, Texas; Charles T. Dotter, Israel Steinberg, Cranston W. Holman, New York; and C. Robert Hughes, Robert E. Wise, John R. Hannan, Cleveland, Clinical and Technical Problems in Angiography.

A symposium on thoracic disease has been arranged by the University of Cincinnati College of Medicine with faculty members invited to participate. Other invited speakers on the subject include Drs. John R. McDonald and Oscar T. Clagett, Rochester, Minn.; John A. Evans and Ted R. Smalldon, New York, and Eugene L. Saenger, Cincinnati. A similarly organized symposium has been arranged by Western Reserve University School of Medicine, Cleveland, on the application of radioactive isotopes. In addition to the invited faculty members, invitations have been extended to Dr. Bernard S. Wolf and R. Loevinger, Ph.D., New York; R. J. Kennedy, Ph.D., and W. Snyder, B.S., Washington, D. C.; Drs. Henry Quastler, Urbana, Ill.; Robert H. Coleman, Omaha, Neb., and R. Wayne Rundles, Durham, N. C. A third symposium will be presented by invited faculty members of Ohio State University College of Medicine, Columbus, on Combined Management of Hematologic and Allied Diseases from the Medical and Radiologic Viewpoints. The Caldwell Lecture will be delivered by Dr. Stanley P. Reimann Philadelphia, on "Differentiation of Cells and Tissues." He will receive the medal of the society. The annual banquet will take place Thursday at 7:30 p. m.

## LATIN AMERICA

**Dr. P. O. Wolff Joins WHO.**—Dr. Pablo O. Wolff, Buenos Aires, has been appointed medical officer at the headquarters of the World Health Organization in Geneva, Switzerland, effective July 25.

**Institute of Oncology.**—On grounds of the Ciudad University, the Liga Dominicana contra el Cancer, Trujillo City, District of Santo Domingo, on May 8 inaugurated its $95,000 Institute of Oncology, built with an initial endowment of $40,000 from Dr. Herbert Pieter, Trujillo City, and completed by public subscription. The hospital has a capacity of 80 beds and is equipped with radium offered by the Hon. President Trumillo Molina.

**Child Separation Study.**—A five year research study of the effects of separation of children from their mothers is being conducted by psychiatrists of Tavistock Clinic in London. More than 200 children are to be watched at home and in clinics. The research will be conducted at clinics in the North-West Metropolitan Hospital Region and at hostels.

## CORRECTION

**Coulee Dam Needs Two Doctors.**—The U. S. Bureau of Reclamation, which is seeking two doctors for the Coulee Dam area of Eastern Washington will contribute up to $1,500 toward the cost of remodeling an available building into offices as desired by the new tenants, not $15,000 as was stated in The Journal July 30, page 1108.

# Marriages

Clyde Vaughan Stanley Jr., Stanley Town, Va., to Miss Patricia Meighan in Birmingham, Ala., June 30.

John Long Thompson Jr., Montgomery, Ala., to Miss Ann Ruth Swift in Birmingham, June 28.

David John Stephenson, Denver, to Miss Barbara Loise Waugh in Hanover, N. H., June 25.

Guy Phillip Sharpe Jr., to Miss Julia Katherine Wright, both of Roanoke, Va., June 25.

Samuel B. Johnson, New Orleans, to Miss Peggy Boswell at Sanatorium, Miss., June 25.

James Daniel Hardy, Philadelphia, to Miss Louise Scott Sams at Decatur, Ga., July 1.

John May, Bennettsville, S. C., to Miss Betty Brown in Hemingway, June 30.

# Deaths

**Robert Sproul Carroll,** Asheville, N. C.; born in Cooperstown, Pa., Feb. 18, 1869; Marion-Sims College of Medicine, St. Louis, 1893; Rush Medical College, Chicago, 1897; fellow of the American Psychiatric Association, Association for the Study of Internal Secretions, Association for Research in Nervous and Mental Disease, Southern Society of Philosophy, American Association for the Advancement of Science, American Eugenics Society, American Ethnological Society, American Museum of Natural History and others; a founder and medical director of Dr. Carroll's Sanitarium, changed in 1912 to Highland Hospital, which he presented to Duke University at Durham in 1939 as a therapeutic unit in the department of psychiatry; in 1946 he retired as president and medical director; lecturer in psychiatry at Duke University; author of "The Mastery of Nervousness," 1917; "The Soul in Suffering," 1919; "Old at 40 or Young at 60," 1920; "The Grille Gate," 1922; "Aseptic Meningitis in Combating the Praecox Problem," 1923 and "What Price Alcohol?" 1941; died June 26, aged 80.

**Andrew Magee Harvey** ⊕ Long Beach, Calif.; born in Galesburg, Ill., Jan. 14, 1868; College of Physicians and Surgeons of Chicago, 1893; member of the House of Delegates of the American Medical Association in 1913, 1914 and 1916; emeritus member of the Illinois State Medical Society; member of the American Association of Industrial Physicians and Surgeons; fellow of the American College of Surgeons; served as assistant health officer and acting health officer; formerly practiced in Chicago, where he was chief physician and surgeon for the Crane Company; while residing in La Grange, Ill., he was president of the village board and the board of education; died July 18, aged 60.

**William Beverley Mason** ⊕ Washington, D. C.; born in 1874; Medical College of Virginia, Richmond, 1899; professor emeritus of otorhinolaryngology at George Washington University School of Medicine; specialist certified by the American Board of Otolaryngology; member of the American Laryngological, Rhinological and Otological Society and the American Otological Society; fellow of the American College of Surgeons; affiliated with the Episcopal Eye, Ear and Throat Hospital, where he served on the board, Children's Hospital, Columbia Hospital for Women and Lying-In Asylum, and Central Dispensary and Emergency Hospital; died June 30, aged 74, of coronary arteriosclerosis and duodenal ulcer.

**Wilhelm S. Anderson,** Northfield, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1903; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; served on the staffs of the Warren (Minn.) Hospital, Deaconess and St. Michael's hospitals in Grand Forks, N. D., and the U. S. Veterans Hospital in Fort Snelling; died June 26, aged 73, of coronary thrombosis.

**Hubert Rogers Arnold** ⊕ San Francisco; University of California Medical School, San Francisco, 1922; fellow of the American College of Surgeons; affiliated with St. Mary's Hospital; died June 20, aged 55, of cystic myeloma.

**Louis Axelrod** ⊕ Major, M. C., U. S. Army, Chicago; University of Illinois College of Medicine, Chicago, 1941; entered the regular U. S. Army in October 1942; served in Europe during World War II; recently assigned to Fitzsimmons General Hospital in Denver; killed near Idaho Springs, Colo., July 3, aged 32, in a skiing accident.

**Charles Edgar Barker** ⊕ Oklahoma City, Okla.; Denver and Gross College of Medicine, 1907; an Associate Fellow of the American Medical Association; fellow of the American College of Surgeons; one of the founders and formerly vice president Mercy Hospital, where he died June 3, aged 68, of cerebral hemorrhage.

**Percy Livingston Barnes,** Fort Steilacoom, Wash.; Pulte Medical College, Homeopathic, Cincinnati, 1905; formerly affiliated with Western State Hospital; died in Tacoma recently, aged 68.

**Frank Kelsey Belsley,** Benton Harbor, Mich.; Washington University School of Medicine, St. Louis, 1935; member of the American Medical Association; past president of the Berrien County Medical Society; affiliated with Mercy Hospital; died May 31, aged 40.

**Edward Weston Benham,** Mankato, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1895; died in Compton, Calif., June 19, aged 81, of cerebral arteriosclerosis and generalized arteriosclerosis.

**Pauline Bertram,** Keokuk, Iowa; College of Physicians and Surgeons, Keokuk, 1890; died May 8, aged 83, of cerebral hemorrhage.

**Isabel Mary Geddes Bridges,** Orlando, Fla.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1898; died April 6.

**Lionel Botleman Brown** ⊕ Stratton, Neb.; University of Nebraska College of Medicine, Omaha, 1922; served on the village board and board of health; affiliated with Stewart Hospital; died June 21, aged 53, of cerebral hemorrhage.

**Paul Edgar Conrad** ⊕ Hiawatha, Kan.; University of Nebraska College of Medicine, Omaha, 1924; killed May 20, aged 53, in an airplane crash.

**Charles B. Davis,** Walker, Mo.; Louisville (Ky.) Medical College, 1893; member of the American Medical Association; past president of the Vernon-Cedar Counties Medical Society; died June 15, aged 81, of cerebral thrombosis.

**Rutherford Scott Duemler,** Seneca, Mo.; University of Kansas School of Medicine, Kansas City, 1940; member of the American Medical Association; died in Freeman Hospital, Joplin, May 7, aged 38, of calculus of both kidneys.

**Samuel Ernest Edmunds,** Charleroi, Pa.; Atlantic Medical College, Baltimore, 1910; died June 8, aged 74, of carcinoma of the rectum.

**Raymond Clair Fagley,** Upper Darby, Pa.; Medico-Chirurgical College of Philadelphia, 1911; member of the American Medical Association, Missouri State Medical Association and the American Psychiatric Association; specialist certified by the American Board of Psychiatry and Neurology, Inc.; served during World Wars I and II; formerly chief medical officer of the regional office, Veterans Administration and senior physician at the Veterans Administration Hospital in Lyons, N. J., died in Kirklyn, May 28, aged 61.

**Samuel H. Greene Jr.,** Washington, D. C.; Columbian University Medical Department, Washington, 1900; member of the American Medical Association; died July 8, aged 75.

**Perley Harriman,** Kittery, Maine; University of Vermont College of Medicine, Burlington, 1902; member of the American Medical Association and the Massachusetts Medical Society; formerly practiced in Lynn, Mass., where he was affiliated with Union Hospital, where he died June 17, aged 81, of arteriosclerosis and endocarditis.

**Frederick Sears Hawes,** Russell, Kan.; Gross Medical College, Denver, 1902; served on the Kansas State Board of Registration and Examination; died June 14, aged 76, of carcinoma of the throat.

**William Albert Hinckle,** Peoria, Ill.; Hahnemann Medical College and Hospital, Chicago, 1903; member of the American Medical Association; past president of the Peoria County Medical Society; served during World War I; died in St. Francis Hospital July 3, aged 73.

**Francis Leslie Hoffman,** Sonoma, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1893; died May 28, aged 87.

**Benjamin Yeager Jaudon** ⊕ University City, Mo.; Columbia University College of Physicians and Surgeons, New York, 1896; an Associate Fellow of the American Medical Association; at one time medical director of the Missouri State Life Insurance Company in St. Louis; affiliated with Barnes Hospital, St. Louis, where he died July 1, aged 75, of coronary thrombosis.

**James M. McCabe,** Sun Prairie, Wis.; Milwaukee Medical College, 1908; member of the American Medical Association; died in Columbus May 11, aged 79, of carcinoma of the prostate.

**John M. Robinson,** Goshen, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1891; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology and the Minnesota State Medical Association; formerly on the staffs of St. Luke's and St. Mary's hospitals in Duluth, Minn.; died June 24, aged 79, of chronic myocarditis and cerebral hemorrhage.

**William C. Russwurm** ⊕ Helena, Ark.; Louisville (Ky.) Medical College, 1884; Medical Department of Tulane University of Louisiana, New Orleans, 1890; an Associate Fellow of the American Medical Association; past president of the Phillips County Medical Society; died June 9, aged 88, of coronary thrombosis.

**Guy Edward Stewart** ⊕ Fayette, Ala.; Medical College of Alabama, Mobile, 1904; served during World War I; died June 17, aged 68, of coronary thrombosis.

# Bureau of Investigation

## KOCH'S ADVERTISING TAKES ON A RELIGIOUS FLAVOR

William F. Koch, M.D., of Detroit, has a new angle in the propaganda for his "specific for cancer," frequently mentioned in THE JOURNAL since 1921.[1] He is now using a booklet, "The Birth of a Science," which is sold by mail from Wichita, Kansas, by the Defender Book and Bible House, and published by the Lutheran Research Society, Inc., Detroit.

"The Birth of a Science" describes Koch as "the modern Pasteur." Of him it also says:

> "Dr. William Frederick Koch, the man used by a kind and beneficent Providence to give new knowledge to the world for the relief of human suffering, consented to answer questions propounded by the authors. This provided a rich fund of information upon which to draw and enabled them to fill in many details which might have been otherwise lacking."

The booklet attacks organized medicine generally and the editor of THE JOURNAL in particular. Abstracts of testimony of "cures" taken from the proceedings in federal court wherein Koch was prosecuted for violation of the Federal Food, Drug and Cosmetic Act are quoted. Included, also, are the testimonials of osteopaths and a few Doctors of Medicine who have used Koch's injections. (The case mentioned ended in dismissal of the charges in 1948. Two trials, each lasting more than four months, the first in 1943 and the second in 1946, were indecisive. The first jury disagreed, but a member of the second became ill after the case had been heard and referred to the jury. Government attorneys moved for dismissal of the case, rather than try the same set of facts after so long a period had elapsed.) The recital of cures of tuberculosis, cancer, poliomyelitis and "pus infections" is similar to that usually employed by quacks.

The Lutheran Research Society, Inc., of Detroit also publishes a magazine, "The Eleventh Hour." Printed are articles attacking organized medicine, Communism and Jews. The publication hails Koch as a medical martyr and lately sympathizes with the promoters of the now defunct Kaadt Diabetic Institute at South Whitley, Ind.[2] (One of the Kaadt brothers is in a federal prison, the other too ill to begin his term.) At first glance, the "Society" seems to be an organization sponsored by the Lutheran church. The director is one Lawrence F. Reilly, who appears to have been educated for the ministry.

In 1948 Koch advertised his "specific" with a reprint of an excerpt from the *Congressional Record* for June 7, 1948, which was distributed, postage free, throughout the country under the frank of Senator Langer of North Dakota. The senator had obtained unanimous consent to the reading into the *Record* of an article alleged to have appeared in "The Eleventh Hour," reporting successful use of Koch's medication on dairy cattle in Canada. The facts were reported in THE JOURNAL for Aug. 7, 1948, page 1333.

To sell his "specific," Koch no longer has his "Koch Laboratories." Now it is the "Christian Medical Research League" of Detroit. This is a "nonprofit" corporation of Michigan. The articles of incorporation, filed in November 1948, show the purposes of the organization as:

> "Research in and development of drugs of a various nature including bio chemical oxidation catalysts, establishment of clinics for research in and mitigation of diseases, and for the training of personnel in the use of bio chemical oxidation catalysts, distribution of drugs and medicines to medical missionaries, manufacture, distribution and sale of drugs and medicines, the conduct of any legitimate business activity that will promote the foregoing or provide funds for the same."

The incorporators are two ministers, the Rev. William T. Watson, D.D., of St. Petersburg, Fla., and the Rev. Sam Swain, D.D., of Akron, Ohio, and a layman, Laurence B. Thatcher of Imlay City, Mich., said to be a dealer in tombstones!

The Rev. Sam Swain is described in the files of the Bureau as:

> ". . . an ordained minister of the gospel, and his denomination is Evangelical United Brethren . . . He has a bookstore . . . and conducts forums and discussion groups, bringing in outside speakers. His organization is known locally as the National Gospel Center, which is a store-front building on South Broadway in Akron."

The same source reveals that Swain is "on the fringe of quackery in religion and an out-and-out fascist. He is not a member of the Akron Ministerial Association, but is classed by this body as an itinerant evangelistic minister with a low rating of respectability in the community." A fellow minister indicated that he was ashamed that Swain was an ordained minister of his denomination.

The Rev. William T. Watson is said to be the minister of "The Tabernacle" in St. Petersburg, which is not associated with any conference or regular church organization. The facts with respect to his religious training or ordination are not clear, and his sermons are described as being of the "hellfire-and-brimstone" type.

The Defender Book and Bible House is an enterprise of Gerald B. Winrod, one of the defendants in the long-drawn-out trial for subversive activities in Washington, D. C. Government prosecutors proceeded on the basis that Winrod was a Nazi worker; the newspaper stories on his divorce case a few years ago indicated that his wife gave some sensational testimony along the same line. Winrod is described as being a controversial figure and as a preacher with considerable oratorical ability, but he is not known to be connected with any particular religious denomination. Rather, he appears to be in the printing business. He is said to possess an extensive and well equipped printing plant in Wichita, which might account in some manner for his espousal of the Koch propaganda.

Religion and religious beliefs have long been used by quacks and faddists as a smoke-screen for their nefarious activities. Faith healers and cultists have found it profitable to utilize man's craving for mysticism. Some probably have been sincere. The more spectacularly successful, however, have seen the business possibilities and have played the game for all it was worth. One writer,[3] commenting on this tendency in quacks, observed:

> "No Quack is a perfect Quack without a pretense of religion. Deprive him of religion and you deprive him of his strongest sales talk. In that respect the Quack differs from the Bootlegger, Poacher and Abortionist. Religion is not regulated by law, until it interferes with the rights of the public . . ."

Again he comments, "Apparently no quack has conscience enough to prevent him from hiding behind religion."

Of the need for physical means to further the acceptance of the healers' doctrines, he wrote:

> "Healing by Faith has always its limitations. The patient must have a keen sense of perception—or a keen sense of imagination—to be healed. To overcome any lack of imagination, faith healers usually use some other agency like stump water, boiling a nail in the milk you drink, or carrying a rabbit's foot; on the same principle that physicians sometimes use a 'placebo' or dough pill to impress the patient. A. T. Still's 'placebo' was 'adjusting the spine,' which is just about as effective as trying to warm your feet in the moonlight. Rubbing the back is an old idea, nearly all tribes and races have tried it. Only America has glorified it and made it a system of healing."

Koch, of course, has always had his "Glyoxylide." Now he has the religious approach; he has learned, apparently, that people regard religion with respect and are not apt to question statements made by ministers or priests because of faith in their honesty and sincerity of purpose.

The facts with respect to Lutheran Research Society sponsorship are revealing. Of the Lutheran Research Society, the Division of Public Relations of the National Lutheran Council and the Lutheran Church-Missouri Synod recently released for publication the following statement:

> "The Lutheran Research Society of Detroit was disavowed in a joint statement issued here by the National Lutheran Council and the Lutheran Church–Missouri Synod, which represent virtually all the Lutheran groups in America.
>
> "The Society, which has been accused of promoting anti-Semitic propaganda through its periodical, 'The Eleventh Hour,'

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[1] J. A. M. A. **76:** 466 and 537 (Feb. 12 and 19) 1921; **82:** 2054 (June 21) 1924; **86:** 1469 (May 8) 1926; **88:** 928 (March 19) 1927; **103:** 116 (July 14) 1934; **106:** 929 (March 14) 1936; **107:** 519 and 1405 (Aug. 15 and Oct. 24) 1936; **112:** 1460 (April 15) 1939; **113:** 711 (Aug. 19) 1939; **116:** 2525 (May 31) 1941; **117:** 216 (July 19) 1941; **118:** 734 and 1373 (Feb. 28 and April 18) 1942; **119:** 502 (June 6) 1942; **121:** 691 (Feb. 27) 1943; **122:** 389 (June 5) 1943; **130:** 1040 (April 13) 1946; **137:** 1333 (Aug. 7) 1948.

[2] J. A. M. A. **137:** 402 (May 22) 1948.

[3] Warner, C. W.: Quacks, Jackson, Miss., The Author, 1930.

and other publications, 'is not sponsored or officially connected with any of the Lutheran church bodies in this country,' the statement said.

"It added that the eight participating bodies of the National Lutheran Council, and the Lutheran Church-Missouri Synod, 'have had no connection with the Lutheran Research Society and have espoused no part of its program.'

"The Lutheran Research Society has, through its publications and otherwise, promoted an alleged cancer remedy and other drugs formerly distributed by Dr. William F. Koch of Detroit, Michigan, which drugs have been questioned by the United States Government, according to counsel. These drugs are currently distributed by an organization known as the Christian Medical Research League. The latter organization is likewise in no way affiliated with any of the Lutheran bodies in America.

"The statement said further that Lawrence F. Reilly, who organized the Lutheran Research Society in 1946, and is its executive director, is not a member of the ministerium of any of the Lutheran bodies in America. All ordained clergymen in the Lutheran Church hold such membership."

The "not-for-profit" activities of the Christian Medical Research League of Detroit are similarly suspect as to their religious character. The Michigan authorities who gave the outfit its charter might well consider the revealing nature of the following item, which appeared on a letterhead of Koch:

"Since Dr. Koch wrote to you in May of 1948, he has turned over the manufacture and distribution of his treatment to the Christian Medical Research League, 14344 East Jefferson Avenue, Detroit, Zone #15. They are selling it only on prescription."

This pseudoreligious promotion in order to get business has resulted in considerable current interest in Koch's treatment. There are Lutheran ministers who have fallen for this line, and some others who may be made of the cloth that produces quacks. For instance, there is one in a small town near Chicago who has urged some of his parishioners suffering from cancer to come to Chicago to be treated by George Franklin Smith, one of Koch's disciples. Smith surrendered his Indiana license to practice medicine in 1948, rather than face charges of gross immorality in the practice of medicine preferred against him by the Indiana State Board of Medical Registration and Examination. He gave these victims, some of whom borrowed the money, the Koch injection. There is indication that one of his patients is still alive, but that case was never proved pathologically to have been of cancer. The pastor has his name on the letterhead of the Christian Medical Research League. He is now said to be urging the epileptic persons of his parish to take a mail-order treatment for epilepsy put out by the Western Medical Corporation of Chicago.

Koch has had thirty years in which to demonstrate the merits of his "specific for cancer." It would seem that by now the world would be beating a path to his door and he could take his place as a great servant of his fellow man by reason of his ability to conquer disease by such an elementary method. Competent medical investigation of his methods has been accorded him. That his claim of discovery of a specific for cancer so long ago is without any foundation of fact is borne out by events which have followed. His treatment is now administered, for the most part, by osteopaths, who may or may not be authorized under the various practice acts to use drugs. He has sold his nostrum to chiropractors, thus aiding the violation of law.[4] These cults have a religious flavor in their background, and so perhaps it is only natural that Koch would follow the line.

On the other hand, a practical problem may have presented itself here. Normal advertising channels are barred to Koch, by reason of the injunction granted against him to the Federal Trade Commission,[5] the government agency having jurisdiction over advertising in the drug field. No longer does he dare to claim therapeutic merit for his product, on the trade package or in the accompanying literature. No doubt he would find himself once more in difficulty with the Federal Food and Drug officials.

The religious approach in the exploitation of a product, which government chemists testified as being undistinguishable from distilled water,[6] as a "specific for cancer" is neither original nor scientific. The "birth of a science" has turned out to be an abortion.

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[4] J. A. M. A. **106:** 2189 (June 20) 1936.
[5] J. A. M. A. **119:** 502 (June 6) 1942.
[6] United States vs. William F. Koch (1943).

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various Centers. Sept. 12-14. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology, Inc. *Oral.* Denver, Oct. 16-20. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

American Board of Dermatology and Syphilology, Inc.: *Written.* Various Centers, Sept. 15. *Oral.* Cincinnati, Oct. 21-23. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Oct. 17. Asst Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven.

American Board of Obstetrics and Gynecology, Inc. *Part I.* Various Centers. Feb. 3. *Final* date for filing application is Nov. 5. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: St. Louis, Oct. 15-19; Boston, April. Sec., Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

American Board of Orthopaedic Surgery. *Part II*, New York City, Feb. 9-10. Address: Sec.-Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City.

American Board of Pathology: Chicago, Oct. 7-8. Final date for filing application is Sept. 1. Sec., Dr. Robert A. Moore, 507 Euclid Ave., St. Louis.

American Board of Pediatrics: *Oral.* Cleveland, Sept. 16-18; New York City, Oct. 21-23; Chicago, Dec. 9-11. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Examinations are given in June and November *of each year in the home town of applicants.* Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

American Board of Preventive Medicine and Public Health: *Parts I and II.* New York, Oct. 22-24. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Proctology: November. Sec., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Psychiatry and Neurology, Inc. *Special Examination.* Chicago, Oct. 24-25. December, New York City. Final date for filing applications is Sept. 15. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Cincinnati, Sept. 28-Oct. 2. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers, October 26. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: *Written.* December. *Oral and Clinical.* Chicago, Feb. 11-15. Final date for receipt of case histories is Sept. 1, 1949. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18.

### BOARDS OF MEDICAL EXAMINERS

Alaska:* Juneau, Sept. 6. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Alabama: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

Arkansas:* *Examination.* Little Rock, Nov. 3-4. Sec., Dr. Joe Verser, Harrisburg. *Eclectic.* Little Rock, Nov. 3. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

District of Columbia:* *Examination.* Washington, Nov. 14-15. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

Georgia: *Examination.* Atlanta, Oct. 11-12. *Reciprocity.* Atlanta, Oct. 13. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Guam: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

Illinois: Chicago, Oct. 4-6. Supt. of Registration, Mr. Fred W. Ruegg, Capitol Bldg., Springfield.

Indiana: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

Iowa: *Examination.* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Sept. 5, Oct. 3, Nov. 7, Dec. 5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

Kansas: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

Maryland: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

Minnesota:* Oct. 18-19. Sec., Dr. Julian F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

Missouri: *Examination.* Jefferson City, October 24-26. *Reciprocity.* Jefferson City, October, 23. Exec. Sec., Mr. John A. Hailey, State Capitol Building, Jefferson City.

Montana: Helena, Oct. 3-5. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

Nevada: Carson City, Nov. 7. Sec., Dr. George H. Ross, 112 N. Curry St., Carson City.

New Hampshire: Concord, Sept. 8-9. Sec., Dr. J. S. Wheeler, 107 State House, Concord.

New Jersey: Oct. 18-21. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico:* Santa Fe, Oct. 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

New York: *Examination.* New York, Albany, Syracuse and Buffalo, Oct. 4-7. Sec., Dr. Jacob L. Lochner Jr., 23 S. Pearl St., Albany 7.

North Carolina: *Endorsement.* Asheville, Oct. 17. Sec., Dr. Ivan Proctor, 226 Hillsboro Street, Raleigh.

Ohio: *Examination.* Columbus, December. *Endorsement.* Oct. 2. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Puerto Rico: San Juan, Sept. 6-10. Sec., Dr. Luis Cueto Coll, Box 3717, Santurce.

South Carolina: *Examination.* Columbia, Nov. 8-9. *Reciprocity.* First Monday of every month. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

Tennessee: *Examination.* Memphis, Sept. 28-29. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis 3.

Virginia: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Wisconsin: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

Wyoming: Cheyenne, Oct. 3. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

**BOARDS OF EXAMINERS IN THE BASIC SCIENCES**

Arizona: *Examination.* Tucson, Sept. 20. Sec., Mr. Francis A. Roy, *Science Hall, University of Arizona, Tucson.*

Arkansas: *Examination.* Little Rock, Oct. 4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

Colorado: *Examination.* Denver, Sept. 14-15. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

District of Columbia: Washington, Oct. 24-25. Sec., Dr. G. C. Ruhland, 4130 E. Municipal Bldg., Washington.

Florida: *Examination.* Gainesville, Nov. 5. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

Michigan: *Examination.* Detroit and Ann Arbor, Oct. 14-15. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing 15.

Minnesota: *Examination.* Minneapolis, Oct. 4-5. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

Nebraska: *Examination.* Omaha, Oct. 4-5. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln 9.

Oregon: Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

South Dakota: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Wisconsin: Milwaukee, Sept. 24 and Dec 3. Sec., Prof. W. H. Barber, Ripon College, Ripon.

# Bureau of Legal Medicine and Legislation

## MEDICOLEGAL ABSTRACTS

**Malpractice: Physician's Failure to Use Sterile Instruments.**—This was an action for damages for personal injuries resulting from the alleged negligence of the defendant physician. From a judgment in favor of the physician, the plaintiff appealed to the district court of appeal, second district, division 3, California.

The plaintiff, a man 41 years of age, went to the defendant's office on June 7, 1944, for a cystoscopic examination. After giving the doctor a history he was taken to another room for further tests and examinations preparatory to the cystoscopic examination. The table in the cystoscopic examination room on which the plaintiff was placed was so constructed that the patient could be turned from a prone position to an erect position without being removed therefrom. While on the table the plaintiff could not see and did not know what was being done except what he could feel. A layman, called a technician, prepared him for examination. From a nurse in the next room the technician obtained a tray containing an installator, swab, water tube, two syringes, a peroneal towel and a sheet. He washed the plaintiff's male organ, injected an anesthetic therein and inserted a ¼ inch stopper to hold the anesthetic in place. The defendant, with a cystoscope taken from a tray in another room, then entered the examination room. A cystoscope is an instrument about twice the length of a fountain pen, but smaller in diameter, made of nickel-plated copper, with the end turned up and a hollow shaft through the center. It was lubricated with a nonoily lubricant. The technician removed the stopper, and the defendant introduced the cystoscope into the opening, inserted it through the organ into the bladder and observed the interior of the bladder, which appeared normal in every respect. Catheters were then inserted through the cystoscope into the bladder through both renal pelves and pushed through the ureter to the kidneys. The catheters had been threaded into the cystoscope by someone not named in the evidence. A specimen of urine was collected through the catheters into test tubes, and examination showed no bacteria or pus. A dye solution was injected into each urethral catheter and roentgenograms taken while the plaintiff was in prone and standing positions and while the instruments remained in his body. The catheters were then withdrawn; the solution remaining in the ureter was allowed to trail to the bladder as far as the prostate level, and roentgenograms were taken. All roentgenograms were normal. At the trial, the defendant testified that fever which develops an unusual time after a cystoscopic examination is not the normal reaction therefrom, and he told the plaintiff that if any reaction occurred at all it would occur within two hours. He also told him that the results of the examination were entirely normal, that the blood cell count, hemoglobin, heart, pulse rate and respirations were normal, that his prostate, prostatic secretion and urine were normal, that his prostate was normal in size, shape and consistency, that his bladder was normal, that both his prostate and bladder showed no pathologic condition, that his kidneys and ureters were normal and that he was a textbook picture of perfection.

About twenty-four hours later the plaintiff began feeling odd. He had chills and fever all that night and all the next day. On June 10 he received some medicines from the defendant's office which he understood were sulfonamide drugs, which he started taking in the afternoon, but he continued having chills and fever that day and all the next day, when he was taken to a hospital. The fever and chills persisted until June 14, and he remained in the hospital until June 16. While in the hospital the plaintiff was attended by an assistant of the defendant. The plaintiff asked this assistant what was causing his severe chills and high temperature, and the assistant replied, "That's hard to say. Everyone knows you have an acute infection of the urinary passages, but I can't understand how it got there. But that is why you are being given the sulfa drugs and pyridium. These medicines are for infections of that kind." About a week later, when the plaintiff was able to leave his home for the first time, he went to the defendant's office. He was given a prostatic massage by the defendant's assistant and samples of his urine were taken for tests. After the tests were completed, he asked the assistant as to the results and was told that they showed that he still had a "25 per cent infection." He was given prostatic massages for the next month and on each occasion the defendant's assistant told him that he had an infection present in the urinary tract but that the amount was gradually decreasing, so that at the time of his last visit the test showed only 10 per cent. Sometime after June 23, while the defendant's assistant was giving the plaintiff a prostatic massage, the defendant appeared and the plaintiff said, "Dr. Belt, Dr. Guth just told me that I still have 10 per cent infection present. I didn't have any infection when I came in here in June and I don't see why I should have any now." The defendant replied that 10 per cent was within normal limits. The plaintiff then asked the defendant what had caused the infection in the urinary tract and the severe chills and high temperature, and the defendant replied, "To tell the truth, I don't know." An expert witness called by the plaintiff testified that the twenty-four hours between the time of the examination and the time the plaintiff began to have chills and fever probably was an incubation period for bacteria introduced into the urinary tract in the preparation for or in the making of the examination, that the introduction was evidently due to some defective condition of the instruments or carrying in from the opening of the meatus (the canal in the male organ), the edges of which were not thoroughly cleansed, and that the treatment given in the hospital was for an infection of the urinary tract. As we read the record, said the court, there is no evidence that either the stopper or the cystoscope or the catheters used in the examination were sterilized before insertion into the plaintiff's body. Neither the technician nor the defendant sterilized any one of them or saw any one of them sterilized. They assumed that they had been sterilized. No one testified that he sterilized any one of them. On the other hand, the court acknowledged, there is no direct evidence that they were not sterilized.

The plaintiff argued, in substance, that he had no infection at the time of the examination, which disclosed his genitourinary system to be in a healthy and normal condition; that an infection developed confined to the genitourinary system about twenty-four hours after the defendant's examination; that this infection must have been introduced during the examination by a failure of the defendant or his associates or employees to effect and maintain proper sterilization for the examination, and that an inference of negligence was therefore raised under the doctrine of res ipsa loquitur.

With this evidence before the jury, the trial court at the request of the defendant gave the following instructions: (1) "Negligence on the part of a physician is never to be presumed, and in the absence of expert testimony to the contrary, it is to be presumed that a physician possesses and has exercised the requisite degree of skill and care in examining a patient." (2) "In determining the question of whether the defendant was guilty of negligence as alleged in the complaint you cannot and must not set up a standard of your own but must be governed in that regard solely by the testimony of expert witnesses who have appeared and testified in this case." Under these instructions, said the court of appeals, the jury was not permitted to determine for itself that failure to properly sterilize the instruments inserted into the plaintiff's body or failure to properly sterilize the parts of the body through which the instruments were inserted, or both, was negligence. Failure on the part of a physician in either of these respects, the court continued, is negligence as a matter of common knowledge. There is no law, as applied to the facts of this case, which requires that the jury in determining those questions be governed solely by the testimony of expert witnesses. The practical effect of these instructions was to direct the jury to return a verdict for the defendant. The court of appeals concluded that an instruction is prejudicially erroneous which excludes an issue that is supported by evidence.

Furthermore, the trial court refused to give the following instruction requested by the plaintiff: "When it is common knowledge that an event or a circumstance that has happened to or developed in a patient is of the kind that ordinarily does not occur in the absence of negligence on the part of the physician attending him, the question whether or not the condition was caused by negligence may be decided from the general circumstances as shown by the evidence and in the light of common experience and reason." It is well settled, said the court, that in undertaking a treatment of a patient the practitioner impliedly contracts and represent not only that he possesses the reasonable degree of skill and learning possessed by others of his profession in the locality but that he will use reasonable and ordinary care and skill in the application of such knowledge to accomplish the purpose for which he is employed and that, if injury is caused by a want of such skill or care on his part, he is liable for the consequences which follow. The plaintiff, said the court, does not contend that the defendant did not have the requisite knowledge and skill. His contention is that the defendant was negligent in preparing for and making the examination, that there was no proper sterilization. Where the evidence conflicts, said the court, each party is entitled to have the law given to the jury which is applicable to his theory of the case and the testimony of his witnesses. The evidence in this case, the court of appeals concluded, without the testimony of experts, was sufficient to warrant the jury in finding that the infection was caused by the negligence of the defendant. It was, therefore, prejudicial error to give the two instructions requested by the defendant but to refuse to give the instruction requested by the plaintiff.

[In a dissenting opinion one of the judges said: "The majority opinion essentially holds that the appearance of an infection after surgery warrants an inference that the surgeon was negligent. I cannot agree. I doubt that my associates realize to what strange ends the doctrine they announce would lead. It is trite to say that examination and treatment by the insertion of instruments into or through the natural openings of the body, or through wounds, is a necessary part of the practice of medicine and surgery. It is also elementary that infection is an insidious and dreaded enemy and that great precautions are taken to prevent it. If it appears where a laceration has been repaired or a fracture reduced, or a tonsil removed or a throat or sinus examined or treated, is this a good reason for inferring negligence? If a patient has a sore throat after having his temperature taken, is it to be inferred that the thermometer was unsterile? If so, the practice of medicine and surgery would be a mixed profession and insurance business. A malpractice action would be little more than an order to the defendant to show cause why he should not pay damages. But I find no precedent for the theory on which the majority opinion proceeds. Laymen have never been allowed to say in a malpractice action that there was negligence because, in their opinion, a better result would probably have been reached if there had been no negligence."]

The judgment in favor of the defendant physician was reversed.—*Moore v. Belt, 203 P. (2d) 22 (Calif., 1949).*

**Workmen's Compensation Acts: Employees Refusal to Undergo Operation for Repair of Ruptured Intervertebral Disk.**—This was a claim for a compensation award for injuries arising out of and in the course of the claimant's employment with the K. Lee Williams Theatres, Inc., as a result of which accident the claimant sustained a fractured intervertebral disk. From the granting of an award of total permanent disability and the claimant's subsequent refusal to undergo a proffered operation for the repair of the fracture, the employer filed an original proceeding for review in the Supreme Court of Oklahoma.

About three months after the original compensation award had been allowed to the claimant, the employer filed a motion with the Industrial Commission asking that the Commission discontinue the payments of temporary total compensation on the ground and for the reason that the claimant's injury could be successfully operated on, that the operation had been tendered to the claimant but that he had refused to undergo it. The claimant replied that the operation offered was a major operation and that he could not legally be required to submit to it. The principal question, said the Supreme Court, is whether the refusal of the claimant to submit to a surgical operation will permit the employer to discontinue compensation payments.

There is much medical testimony in the record, said the Supreme Court. Some four or five physicians and surgeons testified. They all agreed that the claimant's disability is total and likely to be permanent unless an operation is performed, and they all recommended an operation, except one witness who testified that he would not recommend an operation without further hospitalization and while the claimant maintained the mental attitude toward the operation which he had at the time. All the expert witnesses agreed that such operations are 85 to 90 per cent successful but that about 1 per cent of such operations result in death, so that 9 to 14 per cent result either in failure or only in partial success. There was also some evidence to the effect that in some cases the operation resulted in increased disability. The petitioners offered the operation by certain specific doctors and in certain specific hospitals, all of which tenders were refused, and then the petitioners extended the tender to include any hospital or surgeon or any neurologic surgeon or hospital of good reputation comparable to those mentioned in the specific tender, which included the Mayo Clinic and Johns Hopkins.

The employer contended that the claimant's disability should be declared to be temporary rather than permanent because of the claimant's refusal to submit to a surgical operation recommended by the physicians. The petitioners cited a number of cases in which it was held that, where the injury complained of is of such a character as to require skilled and professional needs to determine the cause and extent thereof, the question is one of science and must be proved by the testimony of professional persons. Such is the rule, but in this case all the expert witnesses testified that in their opinion the claimant's injury was a ruptured or fractured intervertebral disk, that his disability was permanent unless relieved by a surgical operation and that the operation indicated was a major operation, successful to the extent of 85 to 90 per cent, with about 1 per cent resulting in death.

The rule appears to be, said the Supreme Court, that "where an employee seeking compensation under the Workmen's Compensation Law of Oklahoma, unreasonably refuses to undergo a minor operation, safe, simple and reasonably certain to effect a cure, the continuing disability results not from the injury but from his own willful act." "Equally true is the rule . . . that the Industrial Commission has no authority to compel an employee to submit to a major operation where there is a risk of life involved in the 'slightest degree.'" In a prior case the Supreme Court of Oklahoma held that the Industrial Commission is without jurisdiction to order an injured employee to submit to an operation involving a risk of life, however slight, merely in order that the pecuniary obligations created by law in his favor against his employer may be minimized. Under the decisions of this court, the Supreme Court concluded, it cannot therefore be said as a matter of law and in the face of all the testimony of the expert, skilled witnesses in this case that the operation recommended is not a major operation, that there is no risk of life involved in such an operation or that under the record claimant's refusal to submit to an operation was unreasonable. The award in favor of the claimant was therefore affirmed.—*K. Lee Williams Theatres, Inc., v. Mickle, 205 P. (2d) 513 (Oklahoma, 1949).*

**Malpractice: Surgeon's Liability for Negligence of Intern.**—The plaintiff's father, as guardian of his infant daughter and also in his own right, filed suit to recover damages for injuries to the eyes of his newborn child allegedly caused by the improper application of silver nitrate solution. From a verdict of nonsuit in favor of the defendant physician, the plaintiff appealed to the Supreme Court of Pennsylvania.

The plaintiff and his wife engaged the defendant physician to attend the wife during her pregnancy and to deliver her of an expected child. A cesarian operation was necessary, and when the time arrived the defendant asked that a certain intern, whose name he mentioned, should be informed that "he was to be his assistant and take care of the baby at the time of the delivery." When the child was delivered the defendant turned it over to the intern for the purpose of tying the cord and applying a solution of silver nitrate to the infant's eyes. Silver nitrate is an extremely caustic drug, and proper technic calls for the application of only 1 or 2 drops in each eye followed by prompt irrigation. A subsequent analysis of the silver nitrate used on this occasion revealed that it was a 2.1 [per cent] solution which, it was testified, was not of excessive intensity. The insertion of silver nitrate or other approved prophylactic agent in the eyes of every newborn child is not only a regularly established practice in obstetric cases but is required by the rules and regulations of the Department of Health of the Commonwealth, the purpose being to prevent the disease known as ophthalmia neonatorum. According to the testimony of the special nurse engaged to take care of the wife, the intern filled a syringe and squirted the solution once into the child's left eye and twice into its right eye, putting into the latter "a great many drops"; moreover, he failed to irrigate the eyes during at least the period of five or ten minutes while this nurse remained in the operating room. The result was that the child lost the sight of her right eye completely and the left eye was severely and permanently scarred.

It was the plaintiff's contention that this case should have been submitted to the jury and that the trial court erred in negating the defendant's responsibility as a matter of law. The plaintiff did not charge the defendant personally with any act of negligence either of commission or omission; it was apparently conceded that he was an obstetrician of high repute and that the operation he performed on the wife was entirely satisfactory and not subject to criticism. On the other hand, the plaintiff's testimony made out a prima facie case of negligence against the intern. Therefore, the only legal question involved, said the court, is whether or not the doctrine of respondent superior applies, that is to say, whether or not, for the purpose of and during the course of the operation, which included the immediate care of the infant child, the intern was, in the view of the law, the servant or employee of the defendant physician.

The general principles of law applicable to the situation, said the Supreme Court, are not only clear but so firmly established that there is no need to explore any new and hitherto uncharted pathway in the law. These applicable principles are as follows: 1. In the determination of whether a person is the servant of another, the essential test is whether he is subject to the latter's control or right of control with respect not only to the work to be done but also to the manner of performing it. 2. A servant directed or permitted by his master to perform services for another may become the servant of such other in performing the services; he may become the other's servant as to some acts and not as to others. 3. A person may be the servant of two masters, not joint employers at one time as to one act, provided that the service to one does not involve abandonment of the service to the other. 4. When different inferences can fairly be drawn from the evidence as to who is the controlling master of the borrowed employee at the time of the commission of the negligent act, it is for the jury, not the court, to determine the question of agency.

In applying these principles of agency to the present case, said the Supreme Court, it is to be noted at the outset that the defendant's obligation under his contract included not only the wife's prenatal care and the delivery of her child but also the care of the latter until it was turned over to the family physician. The wife testified that the defendant said that he would "perform a cesarian operation and care for the baby for the sum of $200." The defendant himself, when asked whether or not his liability was to continue until the baby was turned over to the family doctor, answered, "I so considered that it was." It may well have been in contemplation that he might need help in taking care of the newborn infant, and, as it subsequently turned out, such help was essential. The necessity of employing assistants is one of the ordinary circumstances of both business and professional life, and it is to regulate just such situations that the law of agency exists. In selecting a person to aid him, the defendant was presumably free to make his own choice; there is nothing in the record to indicate that he was compelled to employ an intern. What he chose to do was to call for and borrow from the hospital an intern who thereby became—or so, at least, a jury might find—his temporary servant or employee for the purpose he was engaged.

The next important fact to be considered, the Supreme Court continued, is that the defendant himself testified that he had complete control of the operating room and of every person within it while the operation was in progress. Asked whether the intern was bound to carry out his orders, his answer was, "That is correct." It can readily be understood, said the court, that, in the course of an operation in the operating room of a hospital and until he leaves that room at the conclusion of the operation, the surgeon is in complete charge of those who are present and assisting him and that such supreme control is indeed essential in view of the high degree of protection to which an anesthetized, unconscious patient is entitled—a protection which the wife could justly claim in this case by reason of her trust and confidence in, and necessary reliance on, the surgeon she has employed to take care of her and her child when born.

If, then, it be true that defendant had supervisory control and the right to give orders to the intern with respect to the very act in the performance of which the latter was negligent, it would follow, according to the classic test of agency hereinbefore stated, that a jury would be justified in concluding that the temporary relationship between the defendant and the intern was that of master and servant and that consequently the defendant was legally liable for the harm caused by the intern's negligence.

It was urged by the defendant that the rule of law in regard to a "borrowed employee" should not apply where the employee is a regular part of the personnel of a public or quasipublic hospital, but such an employee, said the Supreme Court, can be temporarily detached, in whole or in part, from the hospital's general control. As far as the evidence disclosed, it was the defendant, not the hospital, who assigned the intern to the task of inserting the silver nitrate solution into the infant's eyes, and, even if in the performance of that act he may also have been serving the hospital, that fact would not change his legal status with respect to the defendant, since a borrowed employee may, in the performance of a given act, be serving the interests of both his general employer and his temporary master.

In the present case, said the Supreme Court, the court erred in entering a nonsuit. It was for the jury to determine whether the relationship between the defendant and the intern, at the time the child's eyes were injured, was that of master and servant. In the determination of whether the intern was the defendant's servant at that time, the mere fact that he was then in the general employ of the hospital would not prevent the jury from finding that he was also at that same time the servant of the defendant if he was then subject to his orders with respect to the treatment of the child's eyes with the silver nitrate solution. Accordingly the nonsuit in favor of the defendant physician was reversed and the cause remanded for a new trial.—*McConnell v. Williams (two cases), 65 A. (2d) 243 (Pa., 1949).*

# Current Medical Literature

## AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

### American J. Digestive Diseases, Fort Wayne, Ind.

**16:121-160 (April) 1949**

Significant Factors in Causation of Biliary Cirrhosis. R. C. Schmitz and R. P. Sinaiko.—p. 121.
Clinical Evaluation of Diverticulosis of Colon. M. Feldman and S. Morrison.—p. 126.
Clinical Aspects of Prolapsed Gastric Mucosa. F. W. Wilson and W. H. Granger.—p. 129.
Observations on Allergy of Respiratory Tract. J. A. Turnbull.—p. 132.
Gastro-Intestinal Food Hypersensitivity: Roentgenographic Demonstration. E. J. Tallant, H. A. O'Neill, F. Urbach and A. H. Price. —p. 140.

### American Journal of Diseases of Children, Chicago

**77:149-284 (Feb.) 1949**

*Influenza Vaccine: Study of Serologic Responses and Incidence of Reactions Following Subcutaneous and Intradermal Inoculation. H. B. Bruyn, G. Meiklejohn and H. Brainerd.—p. 149.
*Essential Xanthomatosis: Fifteen Years' Observation on Case Occurring in Family with Hypercholesteremia. B. Schick and W. M. Sperry —p. 164.
Experimental Peanut Oil Pneumonia in Rabbits. W. G. Gobbel Jr. p.—175.
Retardation of Postnatal Development of Kidneys in Persons with Early Cerebral Lesions. E. C. Roosen-Runge.—p. 185.
Congenital Pseudarthrosis of Tibia and Its Relation to Fragilitas Ossium: Report of Case and Review of Literature. F. Y. Khoo. —p. 201.
Office Management of Allergic Child. J. Glaser.—p. 217.
Present Status of Immunization to and Treatment of Scarlet Fever. P. S. Rhoads.—p. 244.

**Influenza Vaccine.**—Bruyn and associates inoculated subcutaneously or intradermally a total of 79 children with combined type A and type B influenza virus vaccine. Febrile reactions, with temperatures usually over 101 F., and commonly malaise and headache and occasionally vomiting occurred in more than half the children receiving vaccine subcutaneously. The reactions following intradermal inoculation with either one dose of 0.1 cc. or two doses of 0.1 cc. were approximately half as frequent as those following subcutaneous inoculation and were not accompanied with either high temperatures or constitutional symptoms. The serologic response to vaccination with influenza virus vaccine was comparable in all groups with the results for adults. The two doses of 0.1 cc. given three days apart produced the most satisfactory results. The prevaccination titers to type A influenza in these children were approximately in proportion to age.

**Essential Xanthomatosis.**—Schick and Sperry recorded in 1936 results of a year's study on a boy who when first seen presented a picture of severe xanthoma tuberosum with pronounced hypercholesteremia. The patient lived thirteen years on a diet free of cholesterol. Despite this regimen, he continued to exhibit pronounced hypercholesteremia and no regression of the disease was noted. The only effects which may be attributed to the cholesterol-free diet were a relatively small decrease in the average cholesterol concentration of the blood serum and the fact that no new lesions appeared. Treatment with thyroid, insulin, lipocaic, vitamin B complex and ultraviolet radiation had no noticeable effect. The patient's mother and father were both hypercholesteremic, and 1 brother maintained an abnormally high concentration of cholesterol in his blood serum. In a second brother the serum cholesterol level frequently exceeded 300 mg. per hundred cubic centimeters but was within the range for supposedly healthy persons. The observations on this family emphasize the heredofamilial nature of essential xanthomatosis and support the concept that inherited hypercholesteremia is the primary disturbance in this disease.

### American Journal of Physiology, Baltimore

**155:309-490 (Dec.) 1948**

Water Ingestion and Excretion in Rats Under Some Chemical Influences. E. F. Adolph.—p. 309.
Partial Nephrectomy and Water Exchanges of Rats. E. F. Adolph and S. L. Parmington.—p. 317.
Myographic Study of Cat's Heart: Effect of Changes in Venous Return and in Peripheral Resistance on Ventricular Contraction. J. R. DiPalma and R. A. Reiss.—p. 327.
Right and Left Heart Failure: Unilateral Rises in Right and Left Auricular Pressure in Hypervolemic Cats Following Near Lethal Doses of Quinidine, Auricular Fibrillation and Epinephrine. R. A. Reiss and J. R. DiPalma.—p. 336.
Heat Lability of Depressor Substance Present in Human Urine: Effects of Section of Vagus Nerves, Ligation of Carotid Artery and of Autonomic Blockade upon Depressor Response. J. M. Little, H. D. Green and J. I. Bumgarner.—p. 345.
Effects of Cold on Infant Rats: Body Temperatures, Oxygen Consumption, Electrocardiograms. Janet Fairfield.—p. 355.
Tolerance to Cold and Anoxia in Infant Rats. E. F. Adolph.—p. 366.
Lethal Limits of Cold Immersion in Adult Rats. E. F. Adolph. —p. 378.
Influence of Temperature on Response of Frogs to X Irradiation. H. M. Patt and Marguerite N. Swift.—p. 388.
Altered Prothrombin Produced by Dicumarol-Treated Rabbits. J. Lein and Patricia S. Lein.—p. 394.
Effect of Thyroxine and Thiouracil on Rate of Phospholipid Turnover in Liver of Rat. Eunice V. Flock, J. L. Bollman and J. Berkson. —p. 402.
Effect of Suprathreshold Changes in Brightness on Form Perception. F. N. Low.—p. 409.
Study of Exchange of Oxygen and Carbon Dioxide in Supraglottic Portion of Respiratory Dead Space. M. Galdston and S. A. Horwitz. —p. 420.

### Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

**61:291-442 (March) 1949**

*Clinical and Roentgen Manifestations of Erythroblastosis Fetalis. M. Ritvo, I. A. Shauffer and G. Krosnick.—p. 291.
Primary Hemangioma of Skull: Rare Cranial Tumor; Review of Literature and Report of Case, with Special Reference to Roentgenographic Appearance. B. D. Wyke.—p. 302.
Convolutional Markings in Skull Roentgenograms of Patients with Headache. L. M. Davidoff and H. Gass.—p. 317.
Practical Serialograph for Intracranial Angiography. S. Fineman. —p. 324.
Unresolved Pneumonia: Exclusion Diagnosis. C. L. Hinkel.—p. 335.
Unfused Ossification Centers Associated with Pain in Adult. P. C. Swenson and D. Wilner.—p. 341.
Monostotic Fibrous Dysplasia. G. M. Wyatt and W. S. Randall. —p. 354.
Regional Ileitis (Cicatrizing Enteritis) of Prenatal Origin. J. S. Fetter and W. L. Mills.—p. 366.
*Hodgkin's Disease: Histopathologic and Clinical Classification with Radiotherapeutic Response. P. F. Sahyoun and S. J. Eisenberg. —p. 369.
Roentgen Treatment of Cutaneous Carcinoma Involving Cartilage. L. M. Levi.—p. 380.
Treatment of Radiation Sickness with Adrenal Cortical Hormone (Desoxycorticosterone Acetate): Preliminary Report of 50 Cases. F. Ellinger, B. Roswit and S. M. Glasser.—p. 387.
Depth Dose Measurements for 250 KV. Roentgen Rays. C. B. Braestrup, G. H. Cameron and Patricia McClement.—p. 397.

**Roentgen Manifestations of Erythroblastosis Fetalis.**—Ritvo and co-workers say that studies carried out at the Boston City Hospital indicate that roentgen studies of the fetus in utero afford valuable data and may permit of a diagnosis of erythroblastosis fetalis in certain instances. The roentgen observations in erythroblastosis fetalis comprise (1) soft tissue changes consisting of generalized edema and enlargement of the liver and spleen, (2) abnormalities of the skeleton, with increased densities in the bones, and (3) evidences of fetal death.

**Hodgkin's Disease.**—Sahyoun and Eisenberg report 24 cases in which they attempted to correlate the histopathologic aspects with the clinical course and the prognosis. They offer a classification of Hodgkin's disease based on histologic criteria and approximate range of life expectancy. First there is the compactly cellular type, in which the progress is slow and life expectancy is between forty-eight and one hundred and sixty months. The second is the fibrogranulomatous type, which is moderately progressive; the patients with this form can be expected to survive for twenty to sixty months. The third, the loosely cellular type, is rapidly progressive; patients with this form survive only twelve to twenty months. The authors discuss the response to roentgen irradiation and the correlation between the expected course based on histologic study, and the actual course. Nineteen of the 24 cases were followed adequately and in 17 of these 19 the course coincided with the prognosis from histologic study.

## Archives of Internal Medicine, Chicago

### 82:419-518 (Nov.) 1948

Blood Fibrinogen in Myocardial Infarction. L. Meyers.—p. 419.
Tropical Eosinophilic Asthma: Report of Two Cases. I. Fond and P. Ravenna.—p. 422.
Orthostatic Influences on Distribution of Atheromatous Lesions in Cerebral and Other Arteries. S. L. Wilens.—p. 431.
*Syndrome of Short P-R Interval with Abnormal QRS Complexes and Paroxysmal Tachycardia. L. Wolff and P. D. White.—p. 446.
Infectious Diseases: Fourteenth Annual Review of Significant Publications. H. A. Reimann.—p. 468.

**Paroxysmal Tachycardia.**—Wolff and White report a new series of 41 patients, 28 men and 13 women, 21 between the ages of 13 and 29 and 18 between the ages of 30 and 76, with a syndrome of short P-R interval, wide QRS waves and paroxysmal tachycardia. In a previously reported series of 11 patients with this syndrome 10 were less than 29 years old. Paroxysmal tachycardia occurred in 25 cases of the new series and in 10 of the original 11 cases, making a total of 35 cases with paroxysmal tachycardia in the combined series of 52 cases. Analysis of the 52 cases indicates that this syndrome occurs most commonly in young persons, more often in men than in women and in healthy persons from early childhood to old age. Paroxysmal tachycardia is compatible with good health and strenuous activity and does not predispose to the development of heart disease, although congestive failure rarely may result from prolonged, uncontrolled tachycardia. Except for symptoms due to paroxysmal tachycardia and rare instances of sudden death, none of which occurred in the authors' cases, the abnormal mechanism is asymptomatic and does not affect the prognosis in cases of intercurrent disease, surgical procedures or pregnancy and does not affect longevity. The abnormal electrocardiogram was frequently misinterpreted leading to an erroneous diagnosis of serious heart disease or of paroxysmal ventricular tachycardia in more than one third of the cases. If many electrocardiograms are taken, there is a greater probability of recording normal as well as abnormal ventricular complexes, and if the P-R intervals of the normal and the abnormal ventricular complexes are identical it may be assumed that the abnormal electrocardiogram is due to an accessory conducting pathway with a short conduction interval. Such a pathway would make possible the premature depolarization of part of the ventricular muscle and offers a possible explanation for paroxysmal tachycardia. One of the factors which determines whether or not the QRS complex represents an interference phenomenon or depolarization wholly through the anomalous route is the degree of shortening of the anomalous P-R interval. The critical value depends on many factors but is probably close to 0.08 second. Digitalis may or may not widen the anomalous ventricular complex. In 1 case of auricular fibrillation with anomalous QRS waves, digitalis was ineffective in controlling the ventricular rate.

### 82:519-640 (Dec.) 1948

*Coccidioidomycosis: Persistence of Residual Pulmonary Lesions. H. E. Bass, A. Schomer and R. Berke.—p. 519.
Antibiotic Therapy for Cutaneous Anthrax: Report of 5 Cases. W. A. Reilly and C. R. Beeson.—p. 529.
Respiration and Circulation in Pulmonary Anoxemia. A. C. Taquini, J. C. Fasciolo, J. R. E. Suarez and H. Chiodi.—p. 534.
Acquired Acute Hemolytic Anemia of Unknown Cause: Report of Case with Fibrinoid Arteritis, Atypical Pneumonia and Lower Nephron Nephrosis. L. J. Rather.—p. 578.
Lutembacher's Syndrome: Report of Case with Unusually Large Atrial Septal Defect. W. K. Purks.—p. 588.
Renal Insufficiency Due to Paroxysmal Cold Hemoglobinuria. R. M. Sussman and H. J. Kayden.—p. 598.
Jarisch-Herxheimer Reaction in Neurosyphilis Treated with Penicillin. M. T. Hoekenga and T. W. Farmer.—p. 611.

**Residual Pulmonary Lesion in Coccidioidomycosis.**—Bass and associates feel that coccidioidomycosis should no longer be considered a rare disease confined to a small endemic area (the San Joaquin Valley in California). The endemic areas in the United States include Western Texas, Southern New Mexico, Southern and Central Arizona, Southwest Utah and possibly Southern Nevada, and a number of areas in Southern California, in addition to the San Joaquin Valley. The incidence of infection in military personnel who spent part of their military service in the endemic areas was 25 per cent. One's merely driving through an endemic area can result in infection. Any person who presents a pulmonary infiltration in which the diagnosis cannot be readily established should be questioned as to exposure in an endemic area. The authors present observations of 20 veterans of World War II, who had residual lesions of pulmonary coccidioidomycosis. The residual lesions persisted two to five years after the initial infection. The residual lesions were of various types: nodular densities, cavities, mottled infiltrations, fibrosis, pleural effusion and calcification. Skin sensitivity to coccidioidin was observed to diminish with the lapse of time. In cases of cavity formation, no evidence of bronchogenic spread or of seeding to other parts of the lung fields, such as occurs commonly in tuberculosis, was observed. In several of the cases a diagnosis of tuberculosis had been made after the patient's return to civilian life, usually after a routine examination of the chest or preemployment roentgenographic examination. In a number of cases a positive reaction to both the tuberculin and the coccidioidin skin test made diagnosis difficult, but a history of exposure in an endemic area, absence of tubercule bacilli and certain roentgenologic aspects justified a presumptive diagnosis of coccidioidomycosis. Almost all the patients were asymptomatic.

## Archives of Neurology and Psychiatry, Chicago

### 60:425-548 (Nov.) 1948

Cerebral Embolism Following Minor Wounds of Carotid Artery: Report of Autopsy. A. A. Raney.—p. 425.
Retinal, Cerebral and Systemic Arteriosclerosis: Histopathologic Study. B. J. Alpers, F. M. Forster and P. A. Herbut.—p. 440.
Electromyographic Study of Defects of Neuromuscular Transmission in Human Poliomyelitis. R. Hodes.—p. 457.
Reflex Dyskinesia in Children. G. J. Gordon.—p. 474.
Mesantoin® (Methylphenylethyl Hydantoin) in Treatment of Epilepsy in State Hospital. D. B. Ruskin.—p. 484.
Glucose Tolerance in Disturbed Schizophrenic Patients. C. K. Aldrich. —p. 498.
Abscess of Brain Due to Clostridium Perfringens Treated with Penicillin. R. B. Cloward.—p. 504.
Relief of Symptoms Following Encephalography by Combined Premedication and Use of Oxygen. C. J. Kornreich.—p. 512.
Origin of Theory of Conditioned Reflexes: Sechenov; Hughlings Jackson; Pavlov. B. P. Babkin.—p. 520.

## Archives of Ophthalmology, Chicago

### 40:239-370 (Sept.) 1948

Successful Diathermy Treatment of Recurring Retinal Hemorrhage and Retinitis Proliferans: Report of Case. F. H. Verhoeff.—p. 239.
Ocular Changes Associated with Scrub Typhus: Study of 451 Patients. H. G. Scheie.—p. 245.
Nearly One Hundred Years of Ophthalmoscope. M. Sachs.—p. 268.
Cholinesterase in Aqueous of Eye. N. S. Jaffe.—p. 273.
Electrophoretic Patterns of Concentrated Aqueous Humor of Rabbit, Cattle and Horse. L. von Sallmann and D. H. Moore.—p. 279.
Effect of Intramuscular Administration of Morphine, Atropine, Scopolamine and Neostigmine on Human Eye. I. H. Leopold and J. H. Comroe Jr.—p. 285.
Delayed Keratitis Due to Mustard Gas (Dichlorodiethyl Sulfide Burns): Report of 2 Cases. W. S. Atkinson.—p. 291.
Treatment of Ocular Syphilis with Penicillin. C. D. Benton Jr. and A. Heyman.—p. 302.
Diagnosis [illegible] A. J. Bedell.—p. 311.
Practical [illegible] Iris. N. S. Jaffe.—p. 317.
Clinical [illegible].—p. 326.
Medical Versus Surgical Treatment of Glaucoma. L. Lehrfeld.—p. 332.
Retrolental Fibroplasia: Preliminary Report. A. C. Unsworth.—p. 341.

## Bulletin of Johns Hopkins Hospital, Baltimore

### 84:195-284 (March) 1949

Tissue Culture Studies on Liver [illegible] (Arthus) Sensitized Animals in Presence of [illegible] Buckley, Sonja M. Buckley and Margaret K. [illegible]
Failure of Glucoascorbic Acid in Diet to Produce Scurvy in Mice. R. H. Follis Jr.—p. 204.
Renal Failure in Embolic Glomerulonephritis as Complication of Subacute Bacterial Endocarditis. S. Boyarsky, J. M. Burnett and W. H. Barker.—p. 207.
Studies on Hemolysis of Human Erythrocytes by Homologous Complement in Presence of Tannic Acid. J. L. Peck and L. Thomas. —p. 216.
Simple Volumeter for Measuring Oxygen Consumption of Small Animals. J. L. Lilienthal Jr., K. L. Zierler and B. P. Folk.—p. 238.
Clinical Results of Combined Penicillin and Ice Therapy. R. A. Gilbert, R. A. Call and D. J. Roose.—p. 245.
Circulating Anticoagulants: Technic for Their Detection and Clinical Studies. C. L. Conley, R. C. Hartmann and W. I. Morse II. —p. 255.
Physiologic Studies in Congenital Heart Disease: VIII. Physiologic Findings in 2 Patients with Complete Transposition of Great Vessels. J. A. Campbell, R. J. Bing, J. C. Handelsman and others—p. 269.

## California Medicine, San Francisco

### 70:157-234 (March) 1949

*Experimental and Clinical Use of Polymyxin, Chloromycetin and Aureomycin. P. H. Long, E. B. Schoenbach, Eleanor A. Bliss and others.—p. 157.
Human Psittacosis Cured by Penicillin Therapy. A. F. Goggio.—p. 167.
Tuberculosis in Childhood. L. B. Dickey.—p. 171.
Significance of "Albuminuria" (Proteinuria). D. A. Rytand.—p. 174.
Treatment of Sinusitis in Children. V. Goodhill.—p. 177.
Semiautomatic Rapid Film Changer: Its Use in Radiography and Recording of Rapid Physiologic Movements. C. E. Duisenberg.—p. 182.
Radiation Therapy of Ringworm of Scalp. M. E. Mottram and H. H. Hill.—p. 189.
Report of Outbreak of Ringworm of Scalp Due to M. Audouini. R. O. Gilbert.—p. 194.
Factors Influencing Choice of Hearing Aids. W. T. Duggan.—p. 193.
Early Ambulation in Obstetrics and Gynecology. S. Pillsbury.—p. 202.
Leukocytes in "Virus X" Infection. Carrol S. Small and G. G. Hadley.—p. 205.

**Use of Polymyxin, Chloromycetin and Aureomycin.**—During the past eighteen months three new antibiotic agents, polymyxin, chloromycetin and aureomycin have been described. Long and co-workers state that polymyxin is an effective antibiotic for the treatment of severe infections produced by Pseudomonas aeruginosa, Hemophilus pertussis, Hemophilus influenzae, Escherichia coli and Aerobacter aerogenes. Its toxicity to date precludes its general use in infections susceptible to its therapeutic effects. Chloromycetin has been demonstrated to be an effective antibiotic agent for the treatment of rickettsial diseases and typhoid fever. It will undoubtedly prove effective in the treatment of other infections produced by certain gram-negative micro-organisms and viral agents. Aureomycin has been shown to be an active antibiotic agent against rickettsial diseases, primary atypical pneumonia, acute brucellosis, pneumococcic, streptococcic and staphylococcic infections, urinary tract infections produced by E. coli, A. aerogenes and Streptococcus fecalis, certain types of infections of the eye and in subacute bacterial endocarditis when the infecting agent is Str. fecalis. Its clinical use in forms of extrapulmonary tuberculosis is in a completely experimental stage. It is not recommended in typhoid fever or in infections due to Ps. aeruginosa or Proteus vulgaris, and it seems to be ineffective in whooping cough. To date, neither chloromycetin nor aureomycin has resulted in significant signs of systemic toxicity.

## Canadian Medical Association Journal, Montreal

### 60:215-328 (March) 1949. Partial Index

Studies of Nutrition in Newfoundland Children. Kathleen Scobie, Bertha S. Burke and H. C. Stuart.—p. 233.
Streptomycin in Pulmonary Tuberculosis. J. H. Lee.—p. 241.
Chronic Infection of Female Pelvis. W. F. Abbott.—p. 243.
Role of Surgery in Disease of Thyroid Gland. G. S. Fahrni.—p. 247.
Application of Nerve Block in Diagnosis and Therapy. R. A. Gordon.—p. 251.
Simplified Technic for Determination of Prothrombin Times. P. G. Schwager and L. B. Jaques.—p. 258.
*Kidney Substitutes in Uremia: Use of Kolff's Dialyser in 2 Cases. R. A. Palmer and P. S. Rutherford.—p. 261.
Method of Excision and Primary Closure of Pilonidal Cysts and Sinuses. J. L. Russell.—p. 267.
Azygos Vein in Tomography. D. T. Burke and L. Goldberg.—p. 271.
Respiratory Allergy Due to Fungi. C. H. A. Walton.—p. 272.
Renal Tuberculosis in Children. A. B. Hawthorne and M. Siminovitch.—p. 276.
Final Report on Canadian Red Cross Food Parcels for Prisoners-of-War. F. F. Tisdall, Margaret Wilson, Joan Mitchell and others.—p. 279.
*Preliminary Report on Clinical Trials of Antabuse. R. G. Bell and H. W. Smith.—p. 286.
*BAL in Successful Treatment of Mercury Poisoning from Gray Powder. B. Kanee and I. Stoffman.—p. 292.

**Kidney Substitutes in Uremia.**—Palmer and Rutherford refer to reports by Kolff, whose dialyzer they used for explanation of the principles involved and of the technic. The dialyzer consists basically of a long cellophane tube wound spirally around a wooden drum which rotates through a large water bath containing essential electrolytes and dextrose. A special hollow axle and rotation coupling at each end permit continuous blood flow during the drum rotation. All parts in contact with the blood are kept sterile. The authors describe their experience with Kolff's dialyzer in 2 patients. In 1 of these the treatment appeared to play a major role in recovery. Kolff's dialyzer is effective in the reduction of uremia and may aid in the immediate recovery of renal function. The authors discuss the indications for the use of kidney substitutes and recommend the early employment of effective kidney substitutes.

**Clinical Trials of Antabuse.**—According to Bell and Smith antabuse is the Danish trade name for tetraethylthiuramdisulfide. Patients receiving this drug have an abnormal reaction to alcohol in the body. This drug itself has few effects when administered in daily doses of 0.5 Gm. over a period of several months. The symptoms produced by alcohol after administration of antabuse are probably due to interference with the oxidation of alcohol, so that abnormally high levels of acetaldehyde are produced in the body. The report is mainly concerned with the symptoms produced when alcohol is taken after antabuse. Their experiences confirm the results obtained by Jacobsen and associates in Denmark. In accordance with Jacobsen's recommendation that any physician considering the administration of antabuse to his alcoholic patients should first try the effects of antabuse plus alcohol on himself, the first trial was conducted with the authors as subjects. After antabuse was taken (0.5 Gm. daily for four days), alcohol was administered and the effects were observed. The authors experienced the symptoms outlined by Hald and associates, with some additions. The authors describe their observations of alcoholic patients. They gained the impression that the factors concerned in the rate of accumulation of alcohol in the blood are partly responsible for the severity of symptoms seen when a certain quantity of alcohol is administered to a patient who has previously received antabuse. No means of controlling the severity of the reaction has yet been devised. No antabuse should be given until it is certain that the patient is free of alcohol. Serious consequences are to be expected if antabuse is taken while there are appreciable amounts of alcohol in the body. It should not be given to "sober up" an alcoholic person.

**BAL in Mercury Poisoning.**—Kanee and Stoffman report the case of a 2 year old girl for whom gray powder (mercury with chalk) containing 33 per cent mercury was prescribed in a daily dose of ½ grain (30 mg.) for constipation. At the same time yellow mercuric oxide ointment, 2 per cent, was prescribed once daily for a small meibomian cyst of the right lower eyelid. The child showed signs of mercury poisoning, which failed to respond to treatment until BAL (2,3-dimercaptopropanol) was given. Dosage based on 3 mg. per kilogram of body weight was 0.35 cc. of 10 per cent BAL in oil, every four hours for forty-eight hours. On the third day injections were reduced to four, and thereafter one injection was given daily for four more days. The child was discharged eight days after commencement of BAL therapy, the rash having almost completely faded and the temperature having been normal for three days previously.

## Connecticut State Medical Journal, Hartford

### 13:93-176 (Feb.) 1949

Criteria for Hypertensive Sympathectomy: Preliminary Report of Quantitative Rating Chart. W. B. Scoville and R. L. Post.—p. 95.
"Intraderm Sulfur" in Treatment of Acne Vulgaris. M. J. Strauss and H. Sigel.—p. 100.
Fever in Renal Malignancies. H. R. Newman and H. Levine.—p. 104.
Possible Prevention of Cancer in Chronic Radiodermatitis by Medical Means. G. C. Andrews.—p. 105.
Mucosal Edema in Bronchial Asthma. A. L. Maietta.—p. 109.
*Poisoning Due to Ingestion of Wax Crayons. L. W. Minor.—p. 111.
For Manners Are Not Idle. L. A. Buie.—p. 112.

### 13:177-286 (March) 1949

Connecticut Program for Hospitalization of the Indigent. W. H. Horton.—p. 179.
Differential Diagnosis of Coronary Artery Disease. H. M. Marvin.—p. 186.
Survey of Accuracy of Certain Chemical Determinations. J. G. Snavely and W. R. C. Golden.—p. 190.
Psychotherapy in Medical Practice. H. M. Fox.—p. 194.
Fluid Balance and Intravenous Therapy. E. Nichols.—p. 197.
Coronary Artery Disease Without Infarction in Youth: Case Report. J. H. Bland.—p. 207.

**Poisoning Due to Ingestion of Wax Crayons.**—Minor reports a child, aged 2, in whom symptoms of acute poisoning developed following ingestion of orange and yellow crayons. No other source of poisoning could be discovered, and, therefore, this case was assumed to be one of paranitraniline poisoning. The literature contains reports of many such cases, in infants and as an industrial hazard. According to Jones and Brieger, parared, an organic pigment, is made by combination of diazotized paranitraniline with beta naphthol; they point out that orange and red-orange crayons contain parared whereas red and yellow-red crayons are free from it. The child recovered. It seems important that the child ingested wax crayons on an empty stomach, since it has been proved that animals with full stomachs can tolerate larger doses of paranitraniline than those with empty stomachs.

## Gastroenterology, Baltimore

### **12**:177-354 (Feb.) 1949

Vascularization of Human Stomach: Preliminary Note on Shunting Effect of Trauma. A. E. Barclay and F. H. Bentley.—p. 177.

Liver Function in Chronic Alcoholic Patients. I. Incidence of Liver Disease as Indicated by Laboratory Methods and Suggested Screening Procedure. W. L. Voegtlin, W. R. Broz and Marjorie H. Moss.—p. 184.

Gastroscopic Observations in the Army with Special Reference to Gastritis. R. R. Heffner.—p. 199.

*Pain and Hyperamylasemia as Early Signs of Carcinoma of Head of Pancreas and of Ampulla of Vater. C. A. Ross and F. W. Klinge.—p. 204.

Description of a New Gastroscope. D. T. Chamberlin.—p. 209.

Studies on Nausea: Effects of Ipecac and Other Emetics on Human Stomach and Duodenum. S. Wolf.—p. 212.

*Use of Tetraethylammonium Chloride in Treatment of Patients with Peptic Ulcer. D. Cayer, J. M. Little and J. Yeagley.—p. 219.

Argentaffine Tumors of Gastro-Intestinal Tract: Report of Eleven Cases. C. H. Brown, R. P. Bissonnette and H. H. Steele.—p. 225.

*Benign Paroxysmal Peritonitis—Second Series. S. Siegal.—p. 234.

Simple Non-Irritating Tube for Feeding Purposes. W. W. L. Glenn.—p. 248.

Influence of Sugar upon Olfactory Acuity and upon Sensation Complex of Appetite and Satiety. F. R. Goetzl, Margaret Goldschmidt, Priscilla Wheeler and Freya Stone.—p. 252.

Postprandial Symptoms Following Subtotal Gastrectomy for Peptic Ulcer and Their Relationship to Glucose Tolerance Curve. S. E. Schechter and H. Necheles.—p. 258.

Effects of Tetraethylammonium Chloride on Human Gastrointestinal Tract. Rosalie B. Neligh, J. F. Holt, R. H. Lyons and others.—p. 275.

**Pain and Hyperamylasemia in Carcinoma.**—Ross and Klinge report 30 patients, 23 men and 7 women between the ages of 31 and 83, with carcinoma of the head of the pancreas and 10 patients, 8 men and 2 women between the ages of 24 and 68, with carcinoma of the ampula of Vater. Twenty-five of the first group had pain, most often located in the epigastrium or right upper quadrant. Only 2 of the second group had any pain, and in both of these there was coincident gallbladder disease. Even in these 2 cases of pain in ampullary carcinoma, pain did not precede the jaundice; whereas, with carcinoma of the head of the pancreas, pain consistently preceded jaundice. The average duration of symptoms was 4.6 months in carcinoma of the pancreas and 2.8 months in ampullary carcinoma. The average duration of jaundice was essentially the same for the two groups. The serum amylase was elevated in one third of the cases of carcinoma of the head of the pancreas and in all but 1 case of ampullary carcinoma. A correlation of the serum amylase level with the duration of symptoms is demonstrated, the amylase levels being elevated early in the course of the disease. The determination of serum amylase in patients with unexplained abdominal pain may lead to earlier diagnosis of carcinoma of the pancreas and of the ampulla of Vater.

**Tetraethylammonium Chloride in Peptic Ulcer.**—Cayer and co-workers treated 12 patients with active duodenal ulcer who were having pain while being treated with diet, bed rest, sedation and antispasmodics, with tetraethylammonium chloride given intramuscularly three times daily between meals and at bedtime. The intital dose of 300 mg. was increased by 100 mg. per dose until the patient was receiving 600 mg. at each injection. Pain was relieved in fifteen to twenty minutes, and when tetraethylammonium chloride therapy was continued between feedings pain could usually be prevented. Ulcer symptoms can usually be controlled during the day by dietary and other less experimental means. The most satisfactory results in the authors' cases were obtained in patients with persistent night pain; the alleviation of pain allowed the patient at least six hours of undisturbed rest. Unpleasant side effects from the drug were minimal. No alteration of gastrointestinal motility was noted in roentgenologic examination, but there appeared to be some diminution in the secretion of free acid. The relief of pain provided by the drug may be due to an alteration in the response of the circulation of the gastric mucosa.

**Benign Paroxysmal Peritonitis.**—Siegal reports, in addition to the 5 cases of benign paroxysmal peritonitis described by him in 1945, 6 new cases in 3 men between the ages of 29 and 32 and in 3 women between the ages of 28 and 63. This disease begins early in life and continues for many years. It is characterized by recurrent paroxysms of abdominal pain with signs of peritoneal irritation. Fever is present, ranging from 100 F. (37.8 C.) to 105 F. (41.5 C.). Leukocytosis and polymorphonucleosis are frequent in the attack. Chest pain, worse on inspiration, is a common accompaniment. Intervals between episodes, most often one to four weeks, may involve months or even years. These patients remain otherwise well. The practical difficulties of diagnosis must be emphasized particularly as to differentiation from an acute surgical abdominal condition, such as that due to appendicitis. Three patients were operated on during an acute attack. Hyperemia or edema of the peritoneum, with or without serous or serofibrinous exudate, comprise the operative observations. Results of exploration after an interval of several years have been normal. The occurrence of this disease in 5 male members of a single family indicates a definite familial tendency and possibly a genetic factor. All published cases which appear to belong to this clinical category have been either in Jewish or Armenian patients. Benign paroxysmal peritonitis possesses many of the clinical attributes of an allergic disorder. Of 11 patients, 2 had atopic conditions and 4 more had a definite family history of allergy, but causative food allergens were not demonstrated in any of 5 cases completely studied from this point of view. Neither epinephrine nor the antihistamine drugs control the acute attack.

## Journal of Infectious Diseases, Chicago

### **84**:111-220 (March-April) 1949

Immunological Studies in Mice Infected with Larvae of Ascaris Lumbricoides: I. Criteria of Immunity and Immunizing Effect of Isolated Worm Tissues. J. F. A. Sprent and H. H. Chen.—p. 111.

Extracellular Development of Agents of Psittacosis-Lymphogranuloma Group (Chlamydozoaceae). E. Weiss.—p. 125.

Measurement of Aerobic Respiration in Leptospira Icterohaemorrhagiae. P. B. Marshall.—p. 150.

Pathogenesis and Pathology of Experimental Air-Borne Influenza Virus A infections in Mice. C. G. Loosli.—p. 153.

Cellular Reactions in Haemobartonella Infected Rats with Anemia Produced by Anti-Blood Immune Serum. T. B. Thomas, C. M. Pomerat and E. H. Frieden.—p. 169.

Role of Spleen and Lymphoid-Macrophage System in Quinine Treatment of Gallinaceum Malaria: III. Action of Quinine and of Immunity on Parasite. W. H. Taliaferro and Lucy Graves Taliaferro.—p. 187.

## Journal of Lab. and Clinical Medicine, St. Louis

### **34**:297-438 (March) 1949

Studies with Colloids Containing Radioisotopes of Yttrium, Zirconium, Columbium, and Lanthanum. J. W. Gofman.—p. 297.

Experimental Study of Effect of Zirconium and Sodium Citrate Treatment on Metabolism of Plutonium and Radioyttrium. J. Schubert.—p. 313.

Significance of Amino Acid Composition of Proteins Excreted by Nephrotic Child. A. A. Albanese, Virginia I. Davis, Emilie M. Smetak and Marilyn Lein.—p. 326.

Nutritional Status and Infection Response: II. Electrophoretic, Circulating Plasma Protein, Hematologic, Hematopoietic, and Pathologic Responses to Mycobacterium Tuberculosis (H37RV) Infection in Protein-deficient Rat. J. Metcoff, Dorothy Darling, Doris Wilson and others.—p. 335.

Resistance of Tubercle Bacillus to Streptomycin. B. Blattberg and Helen Ehrhorn.—p. 358.

Blood and Cerebrospinal Fluid Concentrations of Aureomycin after Oral and Intramuscular Administration. M. H. Lepper, H. F. Dowling, R. L. Brickhouse and E. R. Caldwell Jr.—p. 366.

Action of Thephorin upon Histamine-Induced Gastric Secretion in Dogs and on Gastric Ulcer Formation in Rats. G. Lehmann and P. L. Stefko.—p. 372.

Effects of Intravenously Administered Histamine on Peripheral Circulation in Man. K. G. Wakim, G. A. Peters, Jean C. Terrier and B. T. Horton.—p. 380.

Photoelectric Determination of Arterial Oxygen Saturation in Man. E. H. Wood and J. E. Geraci.—p. 387.

Isolation of Herpes Simplex Virus on Chorioallantoic Membrane. L. L. Coriell, H. Blank and T. F. McN. Scott.—p. 402.

Therapeutic Effect of Tryptophane in Human Pellagra. R. W. Vilter, J. F. Mueller and W. B. Bean.—p. 409.

Study of Histochemical Iron Using Tracer Methods. K. M. Endicott, T. Gillman, G. Brecher and others.—p. 414.

## Journal of Nat. Cancer Inst., Washington, D. C.

9:261-378 (Feb.) 1949

Distribution Studies in Mice Following Intravenous Injection of Diethyl Beta-Iodoethyl Amine Hydrochloride Prepared with Radioactive Iodine. A. M. Seligman, A. M. Rutenburg and O. M. Friedman.—p. 261.
Fibroids in Guinea Pig (Family 13) After Partial Castration. E. M. Nadel.—p. 271.
*Masculinizing Ovarian Tumor of Adrenal Type. E. J. Mortell.—p. 277.
Some Observations on Normal and Pathologic Anatomy of Kidney of Mouse. Thelma B. Dunn.—p. 285.
Aldolase in Serum and Tissues of Tumor-Bearing Animals. J. A. Sibley and A. L. Lehninger.—p. 303.
Cytologic Studies on Nature of Cytoplasmic Particulates in Cloudman S91 Mouse Melanoma, Derived Algire S91A Partially Amelanotic Melanoma, and Harding-Passey Mouse Melanoma. M. W. Woods, H. G. duBuy, D. Burk and Marie L. Hesselbach.—p. 311.
Enzymatic Activities of Isolated Amelanotic and Melanotic Granules of Mouse Melanomas and Suggested Relationship to Mitochondria. H. G. duBuy, M. W. Woods, Dean Burk and Mary D. Lackey.—p. 325.
Physicochemical Studies of Reversible and Irreversible Complexes of Cobalt, Histidine, and Molecular Oxygen. J. Z. Hearon, D. Burk and A. L. Schade.—p. 337.

**Masculinizing Ovarian Tumor of Adrenal Type.**—Mortell reports a woman, aged 46, who had begun to show signs of masculinization at the age of 40. Generalized hirsutism, baldness, masculine contours and enlargement of the clitoris gradually developed. Preoperative urinary excretion of 17-ketosteroids was 8 mg. in twenty-four hours. Bilateral oophorectomy and supravaginal hysterectomy were performed. Both ovaries were somewhat larger than normal, and the right ovary was larger than the left. Section of the right ovary showed the smooth circular outline of a solid tumor, about 18 mm. in diameter. The tumor had no capsule, but there was no sign of infiltrating growth. Examination of sections of the tumor led to the diagnosis of adrenal tumor of the ovary. After removal of the tumor there was considerable regression of the masculinization.

## Journal Pharmacology & Exper. Therapy, Baltimore

95:285-420 (March) 1949. **Partial Index**

Comparison of Effectiveness of Dihydroergotamine (DHE-45) and Dihydroergocornine (DHO-180) in Prevention of Cardiac Irregularities During Cyclopropane Anesthesia. W. D. Bennett, K. G. Dhuner and O. S. Orth.—p. 287.
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Chemotherapeutic and Pharmacologic Properties of L-Ephedrine Salt of Penicillin G (Tersavin). E. Grunberg, L. O. Randall and R. J. Schnitzer.—p. 336.
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Altered Blood-Pressure Response After Adrenolytic Drugs and Large Doses of Sympathomimetic Amines. I. A. Coret and H. B. van Dyke.—p. 415.

## New Orleans Medical and Surgical Journal

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Shortcomings of Certain Operative Procedures in Treatment of Pulmonary Tuberculosis. L. F. Knoepp.—p. 424.
Prolapse of Gastric Mucosa into Duodenum: Case Report and Analysis of Reported Cases. J. L. DiLeo, L. H. Kuker and R. M. Shepard.—p. 428.
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## Oklahoma State Medical Assn. Jour., Oklahoma City

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Surgical Lesions Involving Brain in Infancy. H. Wilkins.—p. 49.
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## Surgery, St. Louis

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Tetraethylammonium Chloride in Evaluation of Lower Extremity Arterial Disorders. C. H. McIntyre, R. L. Marsh and J. D. Briggs.—p. 348.
Surgical Therapy of Duodenal Ulcer. J. H. Garlock and A. S. Lyons.—p. 352.
Comparative Study of Various Substances for Prevention of Adhesions about Tendons. E. C. Weckesser, B. W. Shaw, G. M. Spears and P. C. Shea.—p. 361.
Ruptures of Muscles and Tendons, with Particular Reference to Rupture (or Elongation of Long Tendon) of Biceps Brachii with Report of 50 Cases. R. L. Waugh, T. A. Hathcock and J. L. Elliott.—p. 370.
Motor Responses of Spatially Transposed Intestinal Loops. D. H. Watkins and F. C. Mann.—p. 393.
Mechanism of Shock in Peritonitis: Study of Hemodynamics of Shock Occurring in Peritonitis Experimentally Produced in Dogs. R. V. Ebert, P. S. Hagen and C. W. Borden.—p. 399.
Acute Perforations of Stomach and Small Bowel Ulcerations: Analysis of 362 Consecutive Cases. C. A. Luer.—p. 404.
Restoration of Grasping Function Following Loss of All Five Digits. B. Cannon, W. C. Graham and J. B. Brown.—p. 420.
Diagnosis of Lesions of Breast. W. T. Fitts Jr. and J. G. Donald.—p. 424.
Double Gall Bladders: Report of 4 Cases, One with Suppurative Cholangitis and Bacteremia. N. F. Hicken, V. L. Stevenson, L. M. Allen and C. R. Cornwall.—p. 431.
Duodenal Diverticulitis with Perforation: Report of Case. W. L. Byerly Jr.—p. 441.
Effect of Surgical Devascularization of Stomach on Production of Mann-Williamson Ulcers. B. Holm and A. G. Mackay.—p. 446.
Method for Producing Coarctation of Thoracic Aorta in Dogs. W. C. Sealey and G. H. McSwain.—p. 451.

## Virginia Medical Monthly, Richmond

76:105-158 (March) 1949

Regional Ileitis: Report of 2 Cases with Summary of Literature. W. P. Barnes.—p. 107.
Diagnosis and Treatment of Malignant Tumors of Ovary. C. B. Morton II.—p. 115.
Relation of Food Allergy to Nutrition, Disease, and Behavior in Childhood. B. B. Jones.—p. 118
*Present Status of Para-Aminobenzoic Acid Therapy in Rocky Mountain Spotted Fever. C. G. Hooten Jr., W. S. Hooten and J. E. Mitchell.—p. 121.
Pregnancy Complicated by Primary Torsion of Normal Fallopian Tube. C. L. Riley.—p. 127.
Case of Anuria During Combined Sulfonamide Therapy. W. R. Chitwood and A. E. LeHew.—p. 128.
Pulmonary Tularemia with Report of 2 Cases. G. B. Craddock and R. V. Crowder Jr.—p. 130.
Uniocular Hysterical Amaurosis. F. V. Gammage.—p. 135.

**Para-Aminobenzoic Acid in Rocky Mountain Spotted Fever.**—Hooten, Hooten and Mitchell point out that Rocky Mountain spotted fever was first thought to occur only in the area for which it is named, but it has since been reported from every section of the United States. They review previous reports on the use of para-aminobenzoic acid in the treatment of this condition and the experiences with this drug in 12 cases treated by themselves and in 48 cases from the literature. Seven of the 12 patients treated by them are reported in detail. The amount of para-aminobenzoic acid required varies, but the blood level should be maintained between 20 and 60 mg. per hundred cubic centimeters. In adults this level can usually be maintained by an initial dose of 8 Gm. and then 2 Gm. every two hours. The 48 cases from the literature and the 12 cases just reported show an almost uniformly good response to treatment with para-aminobenzoic acid. There were 4 deaths (mortality rate of 6.7 per cent). Clinical improvement was usually noted in twenty-four to forty-eight hours after the beginning of para-aminobenzoic acid therapy, and the duration of fever was about one week shorter than in patients who did not receive the drug. The authors feel that para-aminobenzoic acid is now the drug of choice in the treatment of Rocky Mountain spotted fever.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

## Archives of Disease in Childhood, London

### 24:1-80 (March) 1949

Malignant Disease in Infancy and Childhood. W. F. Gaisford.—p. 1.
Bromsulphalein Excretion in the Newborn. P. L. Mollison and Marie Cutbush.—p. 7.
Liver Function in Newborn Infants with Special Reference to Excretion of Bromsulphalein. S. Yudkin and S. S. Gellis.—p. 12.
Liver Damage in Gastro-Enteritis. B. Schlesinger, W. W. Payne and E. D. Burnard.—p. 15.
Spina Bifida Cystica. A. P. Norman.—p. 25.
*Pulmonary Collapse in Pertussis. D. P. Nicholson.—p. 29.
Arobon in Treatment of Infantile Gastro-Enteritis: Clinical Trial. D. Beynon.—p. 41.
Epidemic Gastro-Enteritis of Infants in Aberdeen During 1947. C. Giles, G. Sangster and J. Smith.—p. 45.
Roseola Infantum: Outbreak in Maternity Hospital. U. James and A. Freier.—p. 54.

**Pulmonary Collapse in Pertussis.**—Nicholson reviews the literature relating to pertussis and bronchiectasis and presents observations on a series of 44 children with pertussis, most of them with a type severe enough to warrant admission to a hospital. These children were examined frequently. The shadows seen on the radiographs were usually typical of lobar or segmental collapse, mainly of the middle and lower lobes. Evidence in favor of the shadows representing collapsed lobe was as follows: (1) physical signs of collapse and lack of response to chemotherapy; (2) association of mediastinal shift and compensatory emphysema; (3) the presence in some radiographs of visibly dilated bronchi in the shadow; (4) the similarity of the shadows with the triangular basal shadows. Collapse of over two months' duration was seen in 1 out of 4 mild cases, 9 out of 16 moderate cases, and 13 out of 17 severe cases, that were followed for a sufficient length of time. If collapse is still present after the acute stage is over further treatment is imperative, and should be directed at the collapsed lobe. Postural drainage in the appropriate position should be given and this should be combined with percussion over the affected lobe in an attempt to induce the child to cough up the particles of sputum. Treatment in this manner can be given several times a day and must be given until all hope of re-expansion is abandoned. If reexpansion does not occur within nine months it is unlikely to do so, and bronchiectasis may supervene and surgery may become necessary. Many cases of postpertussis pulmonary collapse still go unrecognized, and all too often the treatment consists of an ineffective cough mixture.

## British Journal of Radiology, London

### 22:123-182 (March) 1949

Radiographic Studies Showing Induction of Segmentation Pattern in Small Intestine in Normal Human Subjects. A. C. Frazer, J. M. French and M. D. Thompson.—p. 123.
Bronchography—Methods by Which it May Be Performed and Factors Influencing Choice of Method Employed: Part I. A. A. Vickers.—p. 137.
Pulmonary Actinomycosis. S. F. Oosthuizen and M. H. Fainsinger.—p. 152.
Estimation of Bi-Spinous Diameter in Pelvimetry. J. B. Hartley.—p. 156.
Simple Apparatus for Aimed Exposures. S. D. Kilner.—p. 158.
Clinical Radiation Dosage. L. Cohen.—p. 160.
Randon Purification Apparatus. H. C. Sutton.—p. 164.
Construction and Performance of High Pressure Condenser Ionization Chamber. F. W. Spiers.—p. 169.
Tangential Irradiation Without Use of Bolus Packing. J. R. Clarkson.—p. 173.

## British Medical Journal, London

### 1:511-556 (March 26) 1949

Propagation of Mouse Tumours by Means of Dried Tissue. W. E. Gye.—p. 511.
Long-Term Cardiac Observation of Children. R. K. Price.—p. 515.
Hog-Stomach Extract and Casein Hydrolysate in Peptic Ulcer. A. W. Kay, R. A. Jamieson and W. E. Smith.—p. 519.
Hyperinsulinism Due to Islet-Cell Adenoma: Cure, with Metabolic Studies Before and After Operation. W. G. D. Murray.—p. 521.
Ringworm of Scalp: Treatment by X-Ray Epilation Without Subsequent Local Application. F. L. Lydon, T. Stephanides and T. M. Robb.—p. 523.
Fulminating Meningococcal Septicemia: Account of Three Cases, with One Recovery. P. Turner and R. V. Dent.—p. 524.
Nomograms for Sling and Assmann Psychrometers. J. B. de V. Weir.—p. 527.

## Irish Journal of Medical Science, Dublin

### 279:97-140 (March) 1949

Dublin Surgery 100 Years Ago. W. Doolin.—p. 97.
*Pneumoperitoneum and Phrenic Paralysis in Treatment of Pulmonary Tuberculosis: Report on 188 Cases. M. Hanrahan.—p. 112.
Note on Use of Radium in Conjunction with Surgery in Gynecology. R. E. Tottenham.—p. 125.

**Pneumoperitoneum and Phrenic Paralysis.**—Hanrahan treated 57 patients with pulmonary tuberculosis with pneumoperitoneum only. Quiescence was achieved in 1 case and improvement in 21 cases; in 11 cases the condition was unchanged and in 24 it became worse. Pneumoperitoneum alone seems to be of little or no benefit, and it should be abandoned or used sparingly. Phrenic paralysis reinforced by pneumoperitoneum was carried out in 131 patients with pulmonary tuberculosis. Quiescence was achieved in 25 cases and improvement in 57; 19 patients were unchanged and 30 became worse. These results show that the majority of cases will require some other form of treatment if quiescence is to be achieved. In 6 of 43 patients in whom pneumoperitoneum and phrenic paralysis had been instituted after attempts to induce pneumothorax had failed the disease became quiescent; 24 in this group were improved; 7 were unchanged and 6 deteriorated, suggesting that pneumoperitoneum and phrenic paralysis are of little value in cases in which visceral and parietal pleurae are widely adherent. Quiescence was established in 12 patients, and 15 were improved in a group of 38 patients in whom pneumoperitoneum and phrenic paralysis were instituted after abandonment of pneumothorax because of fluid or contralateral spread, thus giving a good prospect of satisfactory results following the abandonment of pneumothorax. Quiescence was established in 5 patients, and 4 were improved in a group of 10 patients in whom phrenic paralysis and pneumoperitoneum were instituted complementary to pneumothorax, suggesting that this combined treatment deserves further trial. Results were best with pneumoperitoneum and phrenic paralysis in lower zone disease with cavitation below the hilus, when a partial pneumothorax was conducted simultaneously and where the pleura was relatively free, i. e., after pneumothorax had been abandoned. Pneumoperitoneum and phrenic paralysis had a favorable effect in only a small proportion of cases of cavitation situated above the hilus. Each case must be judged on its merits, and if the treatment is having the desired effect phrenic paralysis and pneumoperitoneum should be maintained for at least three years.

## Journal of Mental Science, London

### 95:1-262 (Jan.) 1949. Partial Index

What the Patient Thinks. W. Rees-Thomas.—p. 1.
Electric Anesthesia and Electro-Narcosis. E. O. Longley.—p. 51.
Leukotomy in Periodic Psychoses. G. N. Jones and P. K. McCowan.—p. 101.
Results of Isolation of Orbital Lobes in Leukotomy. G. Egan.—p. 115.
Environment as Factor in Etiology of Criminal Paranoia. K. O. Milner.—p. 124.
Pupillary Phenomena on Application of Strong Constant Electric Current as Used in Electronarcotic Treatment. R. Klein and D. F. Early.—p. 140.
Nasopalpebral Reflex: Its Application to Neuro-Psychiatry, Particularly to Insulin Shock Treatment. F. F. Kino.—p. 143.
Note on Ammonia and Glutamine Content of Cerebrospinal Fluid. D. Richter, R. M. C. Dawson and L. Rees.—p. 148.
Adrenal Cortical Steroids and Metabolism of Glutamic Acid in Gluconeogenesis. W. R. Ashby.—p. 153.
Physiologic Concomitants of Electronarcosis. L. Rees.—p. 162.
Anatomic Correlates of Improvement after Leukotomy. T. McLardy and A. Meyer.—p. 182.
*Transorbital Leukotomy. G. W. T. H. Fleming and D. G. Phillips.—p. 197.
*Chess as Form of Recreational Therapy. R. Pakenham-Walsh.—p. 203.

**Transorbital Leukotomy.**—Fleming and Phillips review observations of 8 patients who had been subjected to transorbital leukotomy. The technic employed was that described by Freeman. Although all of these patients had a poor prognosis, 7 of the 8 patients showed improvement after transorbital leukotomy. Of 5 patients with depression, 1 recovered completely and the other 4 were improved. One patient with paranoid schizophrenia recovered; another schizophrenic patient was much improved, but a third one appeared to be worse. Two of these patients could not have been operated on by ordinary leukotomy without great risk.

**Chess in Recreational Therapy.**—Pakenham-Walsh discusses his experience with chess games in a mental hospital. Although the object of this report is mainly to stimulate similar activity in other mental hospitals and to bring chess into line with cricket and football, so that interhospital matches could be arranged, he suggests that chess is not merely another form of recreation therapy but that it is an intelligence test of which much use could be made. If a player were to play a series of recorded games both before and after leukotomy, it might be possible to detect changes not only in the intelligence but in the personality, e. g., the cautious player might become reckless, or the man who plays a good attacking game might change to a defensive player.

### Journal of Tropical Medicine and Hygiene, London

**52**:45-66 (March) 1949

Strongyloides Stercoralis Infection. Part II. Strongyloidiasis Among Ex-Prisoners-of-War. L. E. Napier.—p. 46.
Protozoologic and Helminthologic Survey of Three Races in Nairobi, Kenya. J. I. Roberts.—p. 49.
Tribal Distribution of Bilharzia in East Africa. K. E. Dewhurst.—p. 60.

### Lancet, London

**1**:509-552 (March 26) 1949

At the Cross-Roads: Development of Health Services. A. L. Banks.—p. 509.
Action of Dihydroergocornine on Circulation with Special Reference to Hypertension. R. H. Goetz.—p. 510.
Immediate Results of Partial Gastrectomy for Peptic Ulcer. B. B. Milstein.—p. 514.
Agranulocytosis and Thrombocytopenia Following Use of Tridione. T. W. Forster, J. W. Watson and E. Neumark.—p. 517.
*Necrotic Jejunitis. K. A. Fick and A. P. Wolken.—p. 519.
Effect of Intra-Uterine Radium Therapy on Ovarian Function. Gertrude Goldscheider.—p. 521.
*Use of Thrombin in Liver Puncture. L. Friedrich and M. Policzer.—p. 523.

**Necrotic Jejunitis.**—Fick and Wolken direct attention to an apparently endemic, severe and often fatal lesion of the jejunum, observed during the past few years in Northern Germany. Though sometimes there is a short prodromal stage, the onset is usually acute with violent pain in the upper part of the abdomen. Often the pain is located a little to the left of the midline and is associated with a hyperesthetic Head zone from the seventh to the twelfth thoracic segment on the left side and a reflex rigidity of the abdominal wall in the same segments. At the same time the patient usually suffers from nausea and vomiting. The most striking clinical feature is circulatory collapse due to toxemia. The patient may die within twenty-four hours after the onset of the first symptoms. Those who survive this stage pass into either a condition characterized by enteritis with bloodstained diarrhea or a condition of intestinal obstruction resembling paralytic ileus. The histologic picture in the gut is that of fairly generalized necrosis. The disease is thought to be a specific infection to which one is predisposed by defects of diet. Since this paper was written, a new bacillus has been discovered in the intestinal lumen in some cases of jejunitis by Zeissler of Hamburg. This bacterium, previously unrecognized, is an anaerobe of the Clostridium welchii group. It forms a powerful toxin. It is closely related to another bacillus of the same group of Cl. welchii, which causes dysentery in lambs, a condition characterized by severe enteritis. Zeissler holds that his organism, which he names Clostridium enterotoxicus or Cl. welchii type F, plays an important part in the causation of jejunitis. It has also been found in healthy persons in Northern Germany. Should further research confirm Zeissler's opinion about this organism, it would also confirm the opinion held by the authors that necrotic jejunitis is a specific infection the manifestation of which depends on certain other factors.

**Thrombin in Liver Puncture.**—According to Friedrich and Policzer of Budapest, the greatest risk in liver puncture is hemorrhage. After satisfying themselves that it did no harm to the liver tissue in the cadaver, the authors adopted a method in which commercial thrombin is injected into the needle track after the biopsy specimen is withdrawn. The thrombin is provided in powder form. The solvent, put up in separate phials, contains pyrocatechin and calcium chloride, to enhance thrombin activity, and sodium chloride and tricresol, to insure sterility and stability. The authors have obtained the best effects with a solution containing 200 coagulation units in 1 cc. of solvent. The liver puncture needle used is double, the outer needle being 12 cm. long and 2 mm. in bore and the inner 1.4 mm. in bore and fitted with a stylet. The outer needle is graduated in centimeters, and a depth screw is provided to control the depth of the puncture. Apart from the effect of thrombin solution, the authors ascribe the freedom from complications in their cases to the use of a needle which will not pass more than 3 cm. into the liver.

### Medical Journal of Australia, Sydney

**1**:153-184 (Feb. 5) 1949

Bill for Act to Provide for Establishment of National Health Services, and for Other Purposes.—p. 153.

**1**:185-224 (Feb. 12) 1949. Partial Index

*Resection of Lung Tissue for Pulmonary Tuberculosis. C. J. Brown.—p. 185.
Anesthesia in Surgical Treatment of Pulmonary Tuberculosis. R. H. Orton.—p. 189.
Limitations of Role of Radiologist in Diagnosis of Pulmonary Tuberculosis. K. H. Hallam.—p. 193.
Sinusitis in Children. S. Pearlman.—p. 197.
X-Ray Interpretation of Pulmonary Tuberculosis in Childhood. C. Macdonald.—p. 200.
Radiologic Interpretation and Pulmonary Tuberculosis in Adult. M. R. de Lambert.—p. 203.
Pulmonary Tuberculosis in the Elderly. K. H. Hallam.—p. 206.

**Resection of Lung for Pulmonary Tuberculosis.**—Brown lists the following conditions as indications for pulmonary resection in tuberculous patients: (1) high grade bronchial stenosis, with or without associated suppurative disease; (2) tuberculoma; (3) cavity persisting after thoracoplasty; (4) lower lobe cavities which have resisted other methods of treatment, and (5) massive acute tuberculosis which is unilobar or unilateral, when the patient's condition is deteriorating, despite bed rest and streptomycin. He reviews his experiences in 11 pneumonectomies and 7 lobectomies and stresses that resection has established itself as a valuable treatment in certain forms of pulmonary tuberculosis. It is not an alternative to thoracoplasty, but should be used for cases in which thoracoplasty is inapplicable or has failed. Most of the patients selected for resection have no other chance of getting well, and the undoubted risks are justified by the successes. Streptomycin is probably of real value to cover the immediate postoperative period and to control postoperative spread.

### South African Journal Med. Sciences, Johannesburg

**13**:145-182 (Oct.) 1948

Effect of Pituitrin upon Performance in Moderate Heat. W. S. S. Ladell.—p. 145.
Effect of 2,3-Dimercaptopropanol (British Anti-Lewisite) on Toxicity of Neoarsphenamine for Ornithodorus Moubata. J. M. Thorp, B. De Meillon and F. Hardy.—p. 151.
Relationship Between Ectoparasite and Host. III. Development of Cimex Lectularius on Vitamin A-Deficient Rabbits, with Some Observations on Effect of Calcium Technic. B. De Meillon, J. M. Thorp, F. Hardy and J. N. Mentz.—p. 159.
*Structure of Liver in Fatal Burns. J. Gillman and T. Gillman.—p. 169.

**The Liver in Fatal Burns.**—The 38 patients examined by the Gillmans had not received tannic acid in the treatment of their burns. They had died from burns within one hour and as long as thirty-six days after the accident. The authors observed three main types of reactions, namely, loss of stainability of the liver cells, fatty changes and atrophy of cells in the central zone of the lobule. Loss of stainability was seen mainly in the livers of patients dying within forty-eight hours after the accident. Fat, in the form of small and medium-sized droplets, could appear as early as eighteen hours, but it was more consistently observed between thirty-six and seventy-two hours after the accident. Atrophy of the liver cells around the central vein becomes manifest first in a liver thirty-six hours after burns are sustained. The extensive necrosis described in different parts of the world was not observed in this series of cases, probably because tannic acid had not been used on the burns of these patients. Tannic acid presumably intensifies the tendency to necrosis. The authors conclude that in the majority of fatal cases of burns the morphologic changes in the liver were insufficient to account for death. If the liver does contribute to death it does so chemically.

## Acta Medica Scandinavica, Stockholm

### **132:**507-610 (Feb. 28) 1949

Influence of Adrenalin on Blood Sugar and Blood Ketone Bodies in Normal Individuals and in Patients Suffering From Hepatic Disease. A. Warming-Larsen.—p. 507.
*Spontaneous Pneumohemothorax. J. L. Hansen.—p. 517.
Treatment of Heart Block with Adrenergic Substances. E. Roelsen.—p. 534.
Spontaneous Hypoliquorrhea: Report of Case. T. Lindqvist and E. Moberg.—p. 556.
Haverhill Fever (in Connection with Case Observed in Sweden). A. Engel.—p. 562.
Artificial Kidney: VI. Views on Indications for Treatment of Uremia and for Active Removal of Edema by Means of Artificial Kidney, Based on Studies of Uremic Material not Treated with this Method. N. Alwall and B. Herner.—p. 572.
*Id.: Clinical Experiences of Dialytic Treatment of Uremia. N. Alwall, L. Norviit and A. M. Steins.—p. 587.

**Spontaneous Pneumohemothorax.**—Hansen presents 3 cases of spontaneous pneumohemothorax treated at a clinic of thoracic surgery during the spring of 1946. None of them were typical. The symptoms in the first case differed from the usual only in the onset. The patient was hospitalized with a diagnosis of perforated gastric ulcer and was then treated for heart disease. This is by no means a rare variant of the syndrome, and its recognition is important. The other 2 patients exhibited bilateral cystic lung. This cause does not appear to have been observed in the cases published hitherto, or at any rate, not in this form. One of the 2 patients was a woman and one of the few patients over the age of 40 with this type of disorder. In this patient the diagnosis was proved by an operation performed as the last resort after the disease had lasted nineteen days and the symptoms had grown worse. The cysts were so close together that suture of the numerous ruptures was impossible. Thirty-six hours later the patient died in anoxia. Necropsy showed the cysts in both lungs to be so extensive that the normal lung tissue capable of respiration was reduced to practically nothing. A number of the cysts had ruptured. The origin of the hemorrhage could not be demonstrated. In the third patient, a youth of 21, suddenly, without exertion, there developed a pneumohemothorax with severe intrapleural tension which quickly subsided after thoracocentesis. Roentgenographic as well as thoracoscopic examination revealed a cystic lung. In spite of bed rest, closed pulmonary fistula and a constant negative pressure, the right lung showed no tendency to expand. After five weeks a solution of silver nitrate was injected into the pleural cavity. The result was an adhesive pleurisy with rapid expansion of the lung.

**Artificial Kidney: Clinical Experiences.**—Alwall and associates report experiences with dialysis in the first 12 patients treated with a dialyzer of a type in which the cellophane tubing is wrapped round a cylinder of wire netting and is surrounded by a mantle of the same material. In 2 of the 12 reported cases the treatment was repeated after intervals of forty-five and eight days, respectively. Thus, fourteen treatments were given in these 12 cases. Uremia was the reason for dialytic treatment in 9 of the cases, and in 2 severe edema as well as uremia was present. In most of the cases the treatment was carried out under conditions precluding a lasting therapeutic result. The material can thus only show that the method can have therapeutic value, but not to what extent good therapeutic results are to be expected. It offers many valuable experiences for future work.

## Deutsche medizinische Wochenschrift, Stuttgart

### **74:**321-352 (March 18) 1949. **Partial Index**

Bechterew's Disease and Scleroderma; Sclerodystrophic Systemic Diseases. E. Vaubel.—p. 321.
*Usefulness of Maclagan's Thymol Turbidity Test for Differential Diagnosis of Icterus. K. Denninger and A. Goedtler.—p. 326.
*Early Diagnosis of Carcinoma of the Cardia. N. Henning.—p. 329.
Respiratory Insufficiency in Cases of Impediment of Respiratory Movements. H. C. Landen and Ewalda Sürder.—p. 331.

**Thymol Turbidity Test in Icterus.**—Denninger and Goedtler performed Maclagan's thymol turbidity test of hepatic function on 104 patients, 72 of them with icterus and 32 control patients in whom history and clinical examination did not suggest any disease of the liver or of the biliary ducts. The result of the thymol turbidity test was negative in all 32 control patients and in 33 patients with mechanical icterus resulting from obstruction by tumor or stones. The result of the thymol turbidity test was positive in all 36 patients with icterus resulting from parenchymatous disease of the liver. The reaction was negative in only 3 patients with icterus and a partly positive Takata reaction in whom the clinical picture suggested a parenchymatous disease of the liver; the icterus, which might have been mechanical, subsided within a few weeks. In patients with chronic, latent, diffuse hepatic disease, the result of the thymol turbidity test was always positive. It is a reliable index of liver dysfunction in cases of this type. The thymol turbidity test is of great value in the differential diagnosis of jaundice. A great advantage is the technical simplicity of the test.

**Carcinoma of the Cardia.**—Henning reports 52 cases of carcinoma of the cardia in 40 men and 12 women between the ages of 34 and 77. Symptoms were present two months to one year. The first subjective sign was painless dysphagia. Results of roentgenologic examination suggested carcinoma of the fornix involving the cardia in 24 cases; carcinoma was suspected in 20 cases, and cardiospasm was diagnosed in the remaining 8 cases. Endoscopic examination was performed in all 52 cases. The predominant observations in 20 of these cases were a rigid cardia and a more or less narrowed lumen with angular borders. Neoplastic changes above the cardia were not visible. In other cases signs of growth penetrating the wall of the esophagus above the cardia were manifested by a blackish lumen surrounded by four oval, sharply delineated, whitish, flat areas shaped like the jasmin flower. This characteristic picture is a definite aid in differential diagnosis from cardiospasm. Early diagnosis is possible in a much larger percentage of cases of carcinoma of the cardia than carcinoma of other parts of the digestive canal, provided that roentgenologic examination and esophagoscopic examination are performed early for patients with initial dysphagia.

## Lyon Chirurgical

### **44:**129-256 (March-April) 1949. **Partial Index**

*Forty-Five Blalock Operations for Congenital Cyanosis. P. Santy, M. Bérard, J. Bret and P. Marion.—p. 129.
*Thoughts on Raynaud's Disease with Regard to 35 Observations. P. Wertheimer and R. Guillet.—p. 145.
Modern Treatment for Considerable Destruction of Coverings of Extremities by Trauma. F. Lagrot.—p. 158.
Condition of Cystic Degeneration of Preserved Ovaries. C. Roman.—p. 162.

**Blalock Operation for Congenital Cyanosis.**—Santy and co-workers performed the Blalock operation on 23 boys and 22 girls, between the ages of 23 months and 15 years, from a group of 100 children with congenital cyanosis. The operation was performed only in those children in whom deficient pulmonary circulation had been diagnosed on clinical and roentgenologic examination. In 1 case in which the Blalock operation was attempted, it could not be performed because no pulmonary artery was present on the surgically treated side. In all patients operated on the subclavian artery was used for the anastomosis with the pulmonary artery. As a general rule the anastomoses were carried out by the end to side technic. The anastomosis of the subclavian artery with the pulmonary artery by the end to end method of suture warrants satisfactory functional results and is to be considered safe in difficult cases in which the end to side method appears to be technically impossible. There were 5 operative deaths, 3 from cardiac syncope and 2 from diffuse venous hemorrhage. Five additional patients died in one to thirteen days after the operation, 2 of them from pulmonary edema, 1 from septicemia and 1 from empyema. In 3 operation failed, in 1 because of the absence of the right pulmonary artery and in 2 because of the poor permeability of the anastomosis. The operation was successful in 32 patients with complete transformation of the clinical and roentgenologic symptoms.

**Raynaud's Disease.**—Wertheimer and Guillet report on 35 patients, 20 women between the ages of 23 and 68 and 15 men between the ages of 24 and 70, with Raynaud's disease. The patients had vasomotor disturbances of the extremities manifested by paroxysmal attacks of vasoconstriction from cold, and 26 had ulcerations of the subungual pulp. The average duration of symptoms was ten years. Nineteen patients had mild disturbances in the lower extremities and 6 had severe destructive lesions of the distal part of the upper extremities. Satisfactory results were obtained with periarterial sympathectomy in 2, partial results in 5 and failures in 5. Stellectomy was performed by cervical approach in 35 instances without any serious incident. There was clinical improvement, particularly of the trophic lesions. A cure was obtained only in exceptional instances; sensibility to cold and vasomotor attacks usually persisted, although they were improved. Operation on the thoracic chain of the sympathetic trunk was done in 4 cases, but the follow-up period had not been long enough for definite conclusions. Combined with stellectomy, it may yield more constant results. Surgical treatment should be carried out in this direction, since the value of intervention on the thyroid, parathyroids and adrenals has not been established. The pathogenesis of Raynaud's disease is still unknown.

## Nordisk Medicin, Stockholm

### **41**:343-390 (Feb. 25) 1949. Partial Index

Surgical Treatment of Facial Palsy. H. Schjelderup.—p. 343.
Question Technic in Obtaining Anamnestic Date in Nervous Diseases. T. Broman.—p. 349.
Tonsillectomy According to Sluder-Ballenger in Children: After-Examination of 296 Children. A. Bydal.—p. 354.
Causes of Death in Pharyngeal Diphtheria. J. Riis.—p. 357.
*Increased Poliomyelitis Morbidity in Older Age Groups and Its Causes. S. Wernstedt.—p. 361.
*Tests of Air Disinfection by Triethylene Glycol. E. Gedda.—p. 363.
Treatment of Peripheral Facial Palsy in Fractures of Cranial Base. W. Behrman.—p. 368.
Plasma Cell Tumor (Plasmocytoma) in Paranasal Sinuses. P. Berdal. —p. 369.
Penicillin Lavage in Paronychia Tendinosa. A. Langvad-Neilsen. —p. 371.
New Method of Treating Infected Atheroma. O. Arner.—p. 374.
Encephalography in Frontal Lobotomy. B. Köhler.—p. 377.

**Increased Poliomyelitis Morbidity in Older Age Groups and Its Causes.**—Wernstedt says that, with increased urbanization in country districts in Sweden in recent years, improvements in road systems and means of travel and more intensive movement to the cities, persons of low immunity from rural districts have been brought into livelier contact with urban populations and have been exposed to greater risk of poliomyelitis infection. This applies particularly to older children and adults, who are mainly the ones to travel and to settle in cities and densely populated areas for purposes of education or employment in industry or trade. The result has been an increase in the incidence of poliomyelitis in these age groups.

**Tests of Air Disinfection by Triethylene Glycol.**—Gedda reports on two series of tests of the efficacy of air disinfection with vaporized triethylene glycol in public places—a clinic waiting room and a children's home nursery. Similar tests of bacterial concentration without the use of glycol were carried out for the same number of days. Bacterial count with the Bourdillon apparatus showed an average reduction of about 30 per cent in the first series and about 40 per cent in the second. The relative humidity was 35 to 60 per cent in the waiting room and 70 to 80 per cent in the nursery.

## Pediatria, Naples

### **57**:1-116 (Jan.-Feb.) 1949. Partial Index

*Penicillin in Therapy of Gonococcic Vulvovaginitis in Little Girls. A. Visani.—p. 1.
*Penicillin Areosols in Treatment of Nontuberculous Diseases of Lung. M. Scarzella.—p. 12.

**Penicillin Therapy of Gonococcic Vulvovaginitis.**—Visani treated gonococcic vulvovaginitis in 13 girls between the ages of 4 and 10 years. The disease was chronic in 9 and acute in 4. Previous sulfonamide therapy and local antiseptic treatment with or without vaccines had failed. Penicillin was given intramuscularly in doses of 20,000 units every three hours up to a total of 300,000 units. Local penicillin treatment was continued for ten days after discontinuation of the systemic treatment. The treatment was well tolerated. The secretion rapidly became negative for gonococci. Cure for more than one year was obtained in the 4 cases of acute disease and in 7 of chronic disease. Two of the patients with chronic disease had either a recurrence or a reinfection one year after discontinuation of the penicillin therapy, which was repeated successfully. The treatment failed in 2 cases of chronic disease. Penicillin therapy is of great value in gonococcic vulvovaginitis in young girls. In patients who do not react favorably to the treatment, the administration of autovaccines and of estrogens, before or combined with systemic and local penicillin treatment, is indicated.

**Penicillin Areosols in Diseases of Lung.**—Scarzella practiced penicillin areosol treatment in 52 patients with various types of nontuberculous infection of the lung. The group included 47 infants and children and 5 young adults. The daily dose of penicillin used in the preparation of areosols varied from 25,000 to 50,000 units. The treatment was given every eight hours for ten to fifteen minutes for a series of ten or twelve treatments. Best results were obtained in acute abscess of the lung, in acute and chronic bronchitis and in bronchiectasis without pulmonary fibrosis. The improvement from the treatment was moderate in chronic abscess of the lung and in bronchiectasis with fibrosis. In all cases fever disappeared, the patient's general condition improved, the amount of sputum diminished and the sputum became odorless. Penicillin areosols proved to be of great therapeutic value in chronic rhinopharyngitis, especially when it was complicated with otitis. The treatment is also of value in adenoiditis and in inflammation of the lymphatic ring after tonsillectomy.

## Praxis, Bern

### **38**:249-278 (March 24) 1949. Partial Index

Where are We Standing in Fighting Tuberculosis? A. Grumbach. —p. 249.
*Vaccination Against Tuberculosis. A. Delachaux.—p. 253.
*Importance of Tuberculous Bovine Infection for Man. H. Wissler and P. Meister.—p. 259.
Increased Incidence of Anicteric Hepatitis. W. Fritschy and U. Staubli.—p. 261.

**Vaccination Against Tuberculosis.**—Delachaux reports statistical data concerning student nurses in three hospitals in the French section of Switzerland. During the period of 1935 to 1942, before BCG vaccination was instituted, the rate of infection was 14 per cent among the nurses with a negative skin reaction. BCG vaccination during the period of 1943 to 1947 reduced the rate of infection to 3 per cent; the morbidity rate of vaccinated negative reactors as compared with nonvaccinated negative reactors is 1:4.7. BCG vaccination may be carried out exclusively on anergic persons, i. e., on those with a negative skin reaction to tuberculin in Mantoux's test with 1 mg. old Koch's tuberculin or 100 units of its protein purified derivative which elicits an infiltrate of a diameter less than 8 mm. There is little untoward reaction, provided that BCG is applied correctly by the parenteral route. Applied incorrectly, BCG causes disturbances only in an area strongly allergic to tuberculin. BCG is less apt to elicit local, focal or general reactions than the tuberculin. BCG acts by replacing the natural primary inoculation, which always involves a great risk because of its possible virulence. BCG induces an effective protection against the primosecondary complications. Immunity against pulmonary phthisis is less absolute but is highly demonstrative with a morbidity rate among persons vaccinated with BCG as compared with those not vaccinated, varying from 1 : 3 to 1 : 5. BCG vaccination may be carried out on anergic persons whatever the age but is indicated particularly for persons between the ages of 13 and 25, because of the lesser resistance of these persons to tuberculous infection. Vaccination against tuberculosis is imperative in anergic persons who are exposed frequently to Koch's bacillus in their families or in their occupation. Vaccination against tuberculosis does not exclude other current prophylactic measures.

**Tuberculous Bovine Infection.**—Wissler and Meister report on 65 cases of tuberculosis of bones and joints in children admitted to the sanatorium in Davos Platz, Switzerland. Thirty-seven of these had definite pulmonary tuberculosis in the sense of a primary complex; 5 had doubtful pulmonary tuberculosis; calcified mesenteric lymph nodes were present in 7 patients; 4 presented tuberculous cervical lymphoma, and in 12 patients the localization of the primary complex was not determined. Bovine infection may be conveyed to man almost exclusively by food, leading to primary foci in the intestine or in the oral cavity. Cervical lymphoma may be considered as the clinical manifestation of primary infection of the oral cavity, and tuberculous mesenteric lymph nodes may be considered as the clinical manifestation of primary intestinal infection. Bovine infection was responsible for 11 cases in the authors' series. Nineteen patients had tuberculous spondylitis; an additional 19 had coxitis; 14 had gonitis, and 13 presented various localizations. Permanent damage in the form of ankylosis may be expected in 7 of the 11 cases. Bovine infection plays an important part even among the limited number of patients in a children's sanatorium.

### Revista Clínica Española, Madrid

**32:**1-62 (Jan. 15) 1949. **Partial Index**

*Syndrome of Pulmonary Hyperventilation. C. Jiménez Díaz.—p. 15.
*Penicillin Treatment as Test for Differential Diagnosis of Abacteric Endocarditis Lenta and of Certain Forms of Rheumatic Fever. F. De A. Estapé.—p. 32.

**Syndrome of Pulmonary Hyperventilation.**—Jiménez Díaz calls attention to the clinical significance of permanent spontaneous pulmonary hyperventilation in normal persons as causative of the effort syndrome. The syndrome is more frequent in young adults and is more frequent in men than in women. It has its origin in a constitutional sympathetic dystonia. It is aggravated by emotion, changes of environmental temperature and physical effort. Alkalosis ensues with consequent cephalic and peripheral anoxia, various metabolic disorders, hypotension and crises manifested by anguish, abdominal vagal disorders, precordial pain, tachycardia, fainting, dizziness, humming noises, cold perspiration, formication and paresthesia of the limbs. Differential diagnosis between the syndrome of pulmonary hyperventilation and the so-called effort syndrome in patients with heart disease or with neurosis is confirmed by provoking pulmonary hyperventilation of two or three minutes' duration, which results in the production of the acute symptoms. The preventive treatment consists in training the patient to control his emotions. Sedatives, intravenous injections of calcium, an acid diet and training the patient to breath with abdominal muscles are of some value. During the acute attack the patient should be made to inhale a gaseous mixture surcharged with carbon dioxide.

**Penicillin as Test for Diagnosis of Endocarditis Lenta.**—Estapé reports 3 cases of endocarditis lenta. Subacute bacterial endocarditis may exist in the presence of negative blood cultures. The differential diagnosis of true subacute endocarditis with negative blood cultures is at times difficult to make. Penicillin therapy in adequate doses and for sufficient duration constitutes the best method of arriving at a differential diagnosis. When the response is nil or is sluggish, the doses can be increased and the period of treatment extended to five weeks. In bacterial endocarditis four or five weeks is the minimum necessary time to check the infection. Penicillin is effective in subacute endocarditis with negative blood cultures. It is only in subacute abacterial pseudoendocarditis and in subacute rheumatism that penicillin is ineffective. In cases of erroneously diagnosed rheumatic fever with positive penicillin therapy, bacterial endocarditis of unknown origin is most likely present.

### Strasbourg Médical

**109:**43-54 (Feb. 5) 1949

*Neurologic Symptoms in Patients with Gastroduodenal Ulcers. J. Warter and A. Fitzenkam.—p. 43.
*Treatment of Parotitic Orchitis by Infiltration of Lumbar Sympathetic Nerve. J. Morin.—p. 46.
New Encephalosurgical Method. Chemical Surgery of Nerves. M. Lopez Esnaurrizar.—p. 49.
Treatment of Burns. R. Krafft.—p. 51.

**Neurologic Symptoms in Gastroduodenal Ulcers.**—Warter and Fitzenkam report 72 patients with gastroduodenal ulcers demonstrated by roentgenologic study and in 41 by surgical intervention. The patients presented neurologic symptoms of vestibular type. Sixty-eight (more than 90 per cent) had disturbances of equilibrium manifested by a spontaneous deviation of the stretched out right arm. In all 72 patients the disturbance of the equilibrium was demonstrated by the caloric test. The subjective insensibility of the patients to the caloric test and the absence of vertigo in nearly all patients is emphasized. Four patients presented loss of the vestibular cross reflex; only 2 of the 72 patients presented spontaneous nystagmus. Hypoesthesia of the trigeminus was observed in 7 patients. Hemifacial paresis was observed in 2, and 2 presented disturbances of the periosteal and tendon reflexes. These symptoms arise from the cerebral trunk, particularly from its bulbar portion. They are characteristic for ulcers and are not associated with other digestive, gastrointestinal, hepatobiliary or pancreatic disturbances. They are not of diagnostic value, but they complete the description of the gastroduodenal ulcer as a condition which still requires clarification.

**Treatment of Parotitic Orchitis.**—Morin treated 6 men with parotitic orchitis by infiltration of the lumbar sympathetic nerve with 10 to 20 cc. of a 1 per cent solution of procaine hydrochloride. Within three minutes the patients experienced a sensation of heat in the lower extremities at the level of the testicle, which transformed the painful distension into numbness. Within a short time the pain had disappeared completely and permanently in 4 patients. In 2 patients the pain recurred but was attenuated. Distal manifestations, such as headache, thoracic constriction and vomiting, subsided, and the patients were able to sleep. The effect on the temperature is doubtful, since there was a rise of temperature within two to three days after the first infiltration. Defervescence occurred within three days whether or not the patients were treated by infiltration. The size of the testicle decreased, but a *temporary increase* was observed after infiltration in 1 patient. The course of the orchitis does not seem to be shortened by the treatment. Atrophy of the testicle resulted in 2 of the cases. Infiltration of the sympathetic nerve with procaine hydrochloride is recommended for the alleviation of pain in orchitis.

### Wiener klinische Wochenschrift, Vienna

**61:**161-176 (March 18) 1949. **Partial Index**

Relational Pathology as Basis of Therapeutic Thinking. Commemorating the Death of Gustav Rickers. J. Riese.—p. 161.
*Treatment of Diabetes Insipidus with Strong Analeptics. W. Falta and Hedwig Titze.—p. 164.
Treatment of Local Acute Suppurative Processes with Penicillin. R. Demel.—p. 169.

**Analeptics in Diabetes Insipidus.**—Falta and Titze report 1 case of diabetes mellitus and diabetes insipidus in a man aged 46. The diabetes mellitus was characterized by the instability of the metabolic condition with variations in the insulin requirement apparently caused by changes in the conditions of excitation in the vegetative centers of the diencephalon. The term "rocker" has been used for this type of a diabetic patient. Irradiation of the area of the hypophysis with roentgen rays caused considerable increase in the excretion of sugar but did not affect the excretion of urine. The diabetes insipidus was characterized by increase in the amount of urine up to 20 liters per day. The hyperexcretion of urine was reduced only temporarily by the implantation of two calf hypophyses into the abdominal skin of the patient. A slight reduction of the amount of urine resulted from the administration of diencephalic narcotics such as monosodium diethylbarbiturate and cyclohexenyl ethyl barbituric acid. Chloral hydrate and pituitrin proved ineffective. The hyperexcretion of urine was reduced to about 7 liters per day by six intravenous injections of 20 cc. of 20 per cent alcohol daily or by 100 cc. of 40 per cent alcohol administered by mouth. Purified vasopressin (tonephin) was the most effective drug in reducing the hyperexcretion of urine, but was not available in sufficient amounts. Desoxyephedrine (pervitin®), 2 to 3 tablets of 0.003 Gm. for two days and 5 tablets for two additional days, reduced the amount of urine to 12 liters per day. This amount of urine was maintained by the administration of 2 tablets of this drug three times for seven days. The amount of urine was reduced to 8 liters within four days by the subcutaneous administration of 0.05 Gm. of phenyl methylamino hydroxy propane (ephetonin®) given three times. Cocaine combined with caffeine exerted a strong antidiuretic effect, but it could not be decided which of the two drugs was responsible for the effect. Two types of diabetes insipidus exist, one resulting from vasopressin deficiency or insufficiency of the supraopticohypophyseal tracts, which may be compensated by the intramuscular or subcutaneous administration of purified vasopressin; the other results from the inhibition of the function of the anatomically normal posterior lobe of the hypophysis, or the normal supraopticohypophyseal tracts by higher centers localized in the thalamus or hypothalamus. This inhibition may be removed by the administration of alcohol or strong analeptics.

# Book Notices

**Obstetrics in General Practice.** By J. P. Greenhill, B.S., M.D., F.A.C.S., Professor of Gynecology, Cook County Graduate School of Medicine, Chicago. Fourth edition. Cloth. Price, $5.50. Pp. 468, with 108 illustrations. Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1948.

Four editions of this book have appeared within eight years. By judicious limitation of the subject matter to those aspects of obstetrics which are of direct practical importance, the author has been able to encompass in a volume which is about one quarter the size of our standard textbooks, about all the information which the general practitioner should necessarily possess. Moreover, the common complications are discussed in sufficient detail that he should rarely find it necessary to consult any of the larger works on strictly clinical issues. As a matter of fact, even in those textbooks, he will not often find practical advice provided in greater abundance, or with greater sanity, than in this relatively small manual.

The new edition incorporates all essential new knowledge which is of clinical importance. The section on the troublesome Rh problem has been rewritten and brought up to date. The uses of penicillin and streptomycin in obstetrics, including a detailed consideration of the employment of the former in syphilis, are fully covered. The fifteen page section on placenta previa has been revised in the light of modern trends, and Braxton Hicks version deleted as a recommended method. As in previous editions, safety is emphasized as the paramount objective. The illustrations are attractive and informative, while the small, light format lends itself to easy handling.

General practitioners will find this book full of concise, practical information, and they would do well to read it and take its teachings to heart. If a great many would do so, our maternal and fetal mortality rates would be lower.

**The American Academy of Orthopaedic Surgeons Presents Lectures on Regional Orthopaedic Surgery and Fundamental Orthopaedic Problems.** Selected from the Instructional Courses of the Thirteenth Annual Assembly, Chicago, January 19-23, 1946. Edited by James E. M. Thomson, M.D., Chairman of the Instructional Section. Cloth. Price, $6. Pp. 249, with illustrations. J. W. Edwards, 300 John St., Ann Arbor, Mich., 1947.

The publication of selected subjects from the 1946 instructional courses on regional orthopedic surgery and fundamental orthopedic problems is of commendable interest to the orthopedic surgeon, the general surgeon and the medical practitioner. The lecturers are all senior orthopedic surgeons of experience and ability.

Among the numerous subjects dealt with, particular emphasis has been placed on the shoulder, hip and foot-ankle region. Excellent papers on the anatomy of the region concerned, which are not too detailed but adequate for the problems considered, open each series. The symptoms, pathology and diagnosis of the frequent causes of disability affecting these large joints are capably and thoroughly discussed. The most comprehensive are those dealing with the shoulder, especially stiffness, pain and moderate injury; and this section is of inestimable value to the young specialist and the general man. It is regrettable that papers dealing with the costoclavicular syndrome and ruptured intervertebral disk lesion of the cervical area have been omitted.

Excellent advice is contained in the section dealing with the principles of fracture management, as well as the problem of the clubfoot. The symposium on degenerative hip disease is comprehensive and instructive. The section dealing with the roentgenologic examination of the spine is timely, considering the tremendous interest that exists in low back pain. Some of the roentgenograms could have been more clear; even lining the vertebral bodies would have increased their usefulness. The two short articles dealing with anterior poliomyelitis are instructive, though one could have wished for additional information on this difficult subject.

The cases presented for discussion, which are included at the end of the book, are excellent, but they could well be made fuller and possibly more cases included in an ensuing year.

The American Academy of Orthopedic Surgeons is to be commended for their successful effort each year in holding an instructional course of such merit as these lectures demonstrate.

**Diabetes and Its Treatment.** By Joseph H. Barach, M.D., F.A.C.P., Associate Professor of Medicine, University of Pittsburgh, Pittsburgh, Pa. Cloth. Price, $10. Pp. 326, with 73 illustrations. Oxford University Press, 114 5th Ave., New York 11, 1949.

Dr. Barach's medical textbook on diabetes is a newcomer. The author is an experienced clinician and is now chairman of the useful Metabolism and Endocrinology Study Section of the Research Grants Division of the United States Public Health Service. His book is written for the benefit of the medical practitioner who does not see much of the disease. Its style is similar to that used by Dr. Joslin in his well known textbook, especially in that the statistical method of reporting on various phases of the disease is used freely. Barach's own cases ase used in the assembling of these data, for the most part.

The book begins with a review of the history of the accumulation of knowledge about the disease. Descriptions of developments follow one another with little effort on the part of the author to distinguish between major and minor discoveries. The etiologic and incidence background follows the historical section, with statistical summaries predominating.

Chapters on diagnosis, clinical and laboratory, are followed by discussions of "clinical pathology," diseases of the extremities and their treatment, and the use of surgical procedures in the diabetic patient. Diabetic acidosis and coma and pregnancy in the diabetic patient are discussed thoroughly in separate sections. The treatment of acidosis is given in decidedly empiric fashion.

Barach's thorough study of nutrition and growth in childhood are revealed in the extensive data given in the childhood section. Detailed descriptions are given of various factors employed in selection of diet and maintenance of proper nutrition, instruction of the patient and prevention of diabetes by such methods as are available. A chapter on the use of insulin seems inadequate in view of its importance in treatment and the complexities in its use. The final third of the book contains a variety of over three hundred different quantitative diets suitable for every conceivable circumstance, showing in each case the number of grams of food ordered for each meal, their equivalents in ordinary household measures and the fuel values for each meal and totals for the day. These are accompanied by several pages of recipes, conversion tables, tables of caloric values and ideal weights, and instructions for diet calculations.

As the organization of Dr. Barach's book is not very logical, it will serve better as a reference book for practical detail than as one which will train the physician in fundamental understanding. Some of its explanations of mechanisms are scientifically unsound. Its interpretations are those of the practical clinician rather than those of the impartial and well informed physiologist or biochemist. For example, the lower incidence of diabetes in the South, in rural areas and in China is attributed by the author to differences in diet and other conditions of living in these areas, whereas other possible reasons are obvious. The differences could just as well be explained by deficient diagnosis and reporting in these areas, as suggested by Joslin's survey in Arizona.

Other random criticisms are applicable. The discussion of endocrine relationships in diabetes is not well organized and is unconvincing. A good deal of pertinent physiologic evidence is omitted. The author's instructions that insulin should be omitted or reduced in illness or prior to operation seem dangerous. The author's tolerance for higher sugar levels in mild diabetes is out of line with modern views that much is to be gained by good control in patients who are so easy to manage. The arbitrary prescription, oft repeated, of 1 unit of insulin for every 2 Gm. of glucose in the urine or diet fails to allow for sharp individual variations in insulin sensitivity. The decisive value of insulins with intermediate action and their use in practice is not sufficiently appreciated or covered in a book written in 1949.

This book might be described succinctly as a useful encyclopedia of empiric information regarding diabetes, written in a simple, uncritical style, with moderate views which attempt to compromise in controversial matters, sometimes at the expense of clarity and accuracy.

**Surgical Technique and Principles of Operative Surgery.** By A. V. Partipilo, M.D., F.A.C.S., Associate Clinical Professor of Surgery, the Stritch School of Medicine of Loyola University, Chicago. Foreword by Alton Ochsner, M.D., F.A.C.S., William Henderson, Professor and Director of the Department of Surgery, The Tulane University School of Medicine, New Orleans. Original illustrations by W. C. Shepard and Hooker Goodwin. Fourth edition. Cloth. Price, $15. Pp. 676, with 541 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1949.

Although the previous editions of this work were considered excellent, this edition is an improvement over the others. Most of the book is the work of the author, but a number of excellent chapters were contributed by collaborators who are practicing surgeons of wide experience and actively engaged in teaching. The book covers the surgery of hernia, stomach and intestines, gallbladder, duodenum, pancreas, colon and rectum, breast, thyroid, peripheral vascular diseases and facial injuries. Several chapters are devoted to the general principles of surgery, including a historical review of the sciences of physiology, pathology and anatomy, and the value of these to the surgeon; a discussion of incisions, hemostasis and wound healing. Various methods of knot tying are described and illustrated minutely. The newer surgical procedures, such as vagus resection, surgery of the pancreas, colon and rectum, biliary tract, heart and peripheral vascular system are included and discussed in detail.

Where indicated, each chapter includes a review of surgical anatomy and a discussion of pertinent pathologic and physiologic aspects of each subject. The importance of diagnosis, indication for operation and preoperative and postoperative treatment is emphasized. Technical steps of each operative procedure are described in detail and profusely illustrated. The significance of atraumatic technic, careful hemostasis and gentle handling of tissues, which are essential in any operative procedure, is particularly stressed.

The book is well written. It is clear and concise. The material is up to date, practical and logically presented. The illustrations are numerous and of excellent quality. They combine anatomic and technical detail with scientific accuracy, and greatly enhance the value of the text.

The book is a distinct addition to the library of every student and practitioner of medicine.

**Recent Advances in Respiratory Tuberculosis.** By Frederick Heaf, M.A., M.D., F.R.C.P., Senior Medical Officer, London County Council, and N. Lloyd Rusby, M.A., D.M., F.R.C.P., Assistant Physician, The London Hospital, London, England. Fourth edition. Cloth. Price, $5.50; 21 s. Pp. 290, with illustrations. The Blakiston Company, 1012 Walnut St., Philadelphia 5; J. & A. Churchill, Ltd., 104 Gloucester Place, Portman Sq., London, W.1, 1948.

This book is a revision of a book under the authorship of L. S. T. Burrell of London, who was the author of the first three editions. The present authors prepared the fourth edition in order to describe the notable advances in respiratory tuberculosis since the previous author's death. They feel that the outstanding single development in the management of tuberculosis in the last decade has been realization of the important part which environment and social circumstances play in the successful control of tuberculosis.

There are several excellent chapters on the subject of resistance and infection. Much of the material presented is quoted from many reliable sources from various countries.

The present conception of the value of BCG in immunization of whole populations is discussed. The authors feel that the ideal protection has not been found but that statistical studies warrant the belief that attenuated tubercle bacilli must be nonvirulent, as injection of virulent tubercle bacilli is too risky. The statistical studies presented do not seem to warrant the assumption that BCG is a virulent form of the tubercle bacilli.

Mass radiography has been the most modern innovation in the campaign against tuberculosis. This statement is shared by tuberculosis specialists throughout the world. Considerable attention is given to the technic of roentgen ray studies, and one sentence in the discussion of this subject warrants repetition: "Progressive improvements in apparatus have increased the simplicity of operation, but no x-ray plant can eliminate errors due to wrong positioning, dusty screens, incorrect penetration, bad developing. . . ." Tomography is discussed, and the authors suggest that no well regulated hospital or sanatorium should be without a tomograph. Attention is given to the anxiety states of the tuberculous in relation to symptoms, and the authors suggest that complete physical and roentgen ray studies should be made in all cases to establish the exact state of the lungs.

A significant discussion is presented on the relationship of tuberculosis and pregnancy, and from much quoted material from various countries the authors suggest that termination of pregnancy is not necessary in well controlled cases of tuberculosis in sanatoriums. Collapse therapy is urged in all cases of tuberculosis where pregnancy is present.

Nearly all the new surgical procedures for collapse and relaxation of the lung are described rather briefly; much more space is given to pneumothorax. Lobectomy and pneumonectomy are also mentioned. The authors state that there is a place for such radical surgery in only a few cases.

Socialized medicine from the British point of view is described in several chapters at the end of the book. The government has innumerable rules and regulations to cover diagnosis, treatment and the length of stay in the hospital or sanatorium. This type of control would certainly not appeal to American tuberculosis specialists. The British government also gives a minimal living expense to the family while the breadwinner is under treatment. There are only six reproductions of roentgenograms in the book.

This work is a good review of the present conception of tuberculosis and also of the present mode of treatment, and is recommended to students, public health nurses and general practitioners.

**Recent Progress in Hormone Research: The Proceedings of the Laurentian Hormone Conference (1947). Volume III.** Edited by Gregory Pincus. Cloth. Price, $7.80. Pp. 378, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1948.

Dr. Gregory Pincus has again performed a masterly task in assembling and editing the proceedings of the Laurentian Hormone Conference. As in previous conferences, the emphasis was on the chemistry and physiologic actions of the various steroid hormones and their derivatives. An excellent discussion of the relation of the doisynolic acids to the various sex hormones is presented by Dr. K. Miescher. Only recently have chemical methods been available for a complete study of the relationship of these acids to the naturally occurring sex steroids.

Drs. Seymour Lieberman and Konrad Dobriner present a highly technical, but nonetheless interesting, discussion of steroid excretion in health and disease. The difficulties encountered in attempting quantitative studies of steroid excretion appear to be diminishing; Dr. Dobriner's group is making great strides in elucidating the alterations in the pattern of steroid excretion in various metabolic and endocrine disorders. A presentation by Dr. Harold L. Mason on the metabolism of adrenal hormones extends the paper of Drs. Lieberman and Dobriner into a field which is of rapidly growing importance.

Two papers on chemical cytology by Dr. Edward W. Dempsey and by Dr. C. P. Leblond summarize the progress made in this area, in which the chemist and the pathologist join hands in an attempt to unlock the mysteries of intracellular metabolism.

The biochemistry of the growth hormone is discussed by Dr. Choh Hao Li and Dr. Herbert M. Evans, the former having produced the first pure preparation and the latter having discovered this pituitary hormone.

The physiology of the testis is discussed in four papers, and, as usual, a great deal of the discussion centers around hypogonadism and the "male climacteric." The papers by Dr. Warren O. Nelson and Dr. Carl G. Heller and by Dr. James B. Hamilton serve to clarify this field, which has been well discussed in previous conferences.

For the first time, the relationship of hormones to hypertension receives exhaustive discussion. The relationship of the renal pressor system to humoral influences is presented by Dr. A. C. Corcoran. The relationship of renin, angiotonin and the various enzyme systems with specificity for these substances to other pressor systems within the body is reviewed. Dr. Hans Selye discusses hypertension as a disease of adaptation, a point of view gaining adherence by an increasing number of workers in this field.

Of great value to the student of endocrinology are the delightful and informative discussions given at the end of each paper. The excellent editing of these discussions preserves their informality but makes them a valuable addition to the formal text.

The proceedings of these conferences, of which this is the third volume, should be in the library of every person seriously interested in the fundamental aspects of endocrinology.

**Lehrbuch der Geburtshilfe.** Von Prof. Dr. med. Heinrich Martius, Direktor der Universitäts-Frauenklinik Göttingen. Unter Mitarbeit von Professor Dr. med. Werner Bickenbach, Professor Dr. med. Kurt Nordmeyer und Käthe Droysenals Zeichnerin. Erster Teil: Physiologie Zweiter Teil: Pathologie. [Reprint of 1943 edition]. Boards. Pp. 568; 569-1176, with 1025 illustrations. Georg Thieme, Diemershaldenstrasse 47; Stuttgart-O, 1948.

In the first volume of the *Lehrbuch* the author takes up the physiology of pregnancy, labor, the puerperium and lactation, multiple births, the healthy newborn infant, prenatal care and nutrition of the mother. In the second volume he discusses the pathology of pregnancy, dystocia in labor, the pathology of the puerperium and diseases of the newborn. There are 539 illustrations in the first volume and 486 in the second. Many illustrations are in color and nearly all of them are clear and instructive. However, the reproductions of the roentgenograms are poor. Several illustrations could have been omitted without detriment to the book. The Crede maneuver for separation and delivery of the placenta should not be described or illustrated because, as the author himself admits, the maneuver can do harm. Likewise, the illustrations devoted to packing the uterus for the control of postpartum hemorrhage should be deleted because uterine tamponade has wisely been given up by most obstetricians. The author should omit from the next edition the illustrations of the Gylicki and Gauss pelvimeters for measuring the pelvic inlet because this procedure is not only painful but is entirely unreliable. These instruments should be relegated to the past with the many similar instruments once considered useful. There is no point in demonstrating a colored photomicrograph of a kidney from a woman who died of eclampsia because this lesion is not pathognomonic of eclampsia. In several of the illustrations, ungloved hands are shown, as for packing the uterus. The reviewer disagrees with the author that chloroform is the best anesthetic to use in eclampsia. The safest anesthetic is direct infiltration and the next safest is low spinal.

In spite of these criticisms, the book is excellent. Throughout both volumes, it is apparent that the author has had extensive experience in clinical obstetrics. The advice given is conservative and to the point. Assistance was given by Werner Bickenbach and Kurt Nordmeyer, and the illustrations were drawn by Kaethe Droysen. All these as well as the publishers are to be commended for having produced a good book.

**Practical Spectroscopy.** By George R. Harrison, Ph.D., Sc.D., Professor of Physics; Richard C. Lord, Ph.D., Associate Professor of Chemistry, and John R. Loofbourow, Sc.D., Professor of Biophysics, of the Spectroscopy Laboratory, Massachusetts Institute of Technology, Cambridge, Massachusetts. Cloth. Price, $6.65. Pp. 605, with illustrations. Prentice-Hall, Inc., 70 Fifth Ave., New York 11, 1948.

The authors have presented a comprehensive discussion of the status and possibilities of experimental spectroscopy as it exists today. This includes applications in the fields of physics, chemistry and biology. Emission spectroscopy is treated in detail, including discussions of equipment, facilities and technics. Several methods, such as fractional distillation and the moving plate method especially applicable to the examination of biologic mixtures, are discussed. Absorption spectrophotometry in the ultraviolet, visible and infra-red regions is discussed in less detail. However, these sections constitute one of the best presentations on this field available today in book form. Currently, there is a great increase in the use of spectrophotometry in clinics and pharmacology laboratories. The chapters relating to this subject are recommended reading for all connected with such laboratories.

In discussing a field so widespread as spectroscopy, it is impossible to present an exhaustive description of each technic. An extensive bibliography is given, so that references to more detailed discussions are almost always presented.

**Athletic Injuries: Prevention, Diagnosis and Treatment.** By Augustus Thorndike, M.D., Chief Surgeon to the Department of Hygiene, and to the Harvard Athletic Association, Harvard University, Cambridge, Massachusetts. Third edition. Fabrikoid. Price, $3.75. Pp. 243, with 114 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1948.

This book is well written and well edited. There is one error in the transposition of titles in figures 80 and 81 which is obvious and a typographical error in spelling on page 210. The book gives a clear, concise picture of the diagnosis and treatment of athletic injuries at Harvard University.

Two chapters on "Physical Fitness" and "Physical Fatigue" give sound scientific discourses on these subjects. The author claims that there is no such thing as "the athletic heart." He advocates a break in the monotonous routine of daily practice in order to obviate "mental fatigue."

The author believes that the prevention of injuries is important. This is done by special exercises for the knee and shoulder joints, as well as for other muscles and joints. A sprained ankle always remains a weakened joint, he claims, but he does not believe in routine strapping of ankle joints. "Once a sprain always a sprain."

The protective pads and covering should be regulated uniformly so that they will not injure opposing players.

Thorndike then takes up the different injuries individually in chapters headed "Sprains," "Strains," "Contusions," "Fractures and Dislocations," "Internal Injuries," etc. He lays stress on the early use of cold for many. His statistics compare favorably with those of Lloyd, Deaver and Eastwood and of Hobart, and the knee again leads all other parts of the body in number and percentage of injuries. He lays great stress on muscle injuries, which other authors do not find so frequent or serious.

In mentioning knees the author emphasizes a careful examination. Over half of his knee injuries were sprains, and he claims that he has had only six internal derangements (meniscus damage) in 423 cases since using the Duke-Simpson strapping. This ingenious but complicated strapping is employed in all athletes with a history of earlier sprain. In fifteen years' experience among 16,000 athletes only thirty-three semilunar cartilage injuries were found, necessitating only six operations. However, he does recognize what he calls "inherited school boy knee" and refuses such persons the privilege of playing football. Many of these injuries can be cured by operation and exercises.

**The Achievements of BCG Vaccination, Illustrated by Material at the Tuberculosis Department of the Oslo Public Health Service.** By Gerhard Hertzberg, Medical Officer. Paper. Price, 15 Norwegian kroner. Pp. 312. Johan Grundt Tanum-Forlag, Kr. Augustsgate 7a, Oslo, 1948.

This report of a study of the results of BCG vaccination was culled from the records of the Tuberculosis Department of the Oslo Public Health Service. Of 18,496 persons vaccinated, only a portion were available for analysis. Matched with the vaccinated were 1,832 nonvaccinated persons, who served as controls.

The Norwegian law of 1942 made convertors (persons whose tuberculin skin reactions changed from negative to positive) reportable. In December 1947, BCG was made compulsory for certain groups in Norway. In this material BCG seemed to eliminate such primary tuberculous lesions as erythema nodosum and tuberculosum, hilar adenitis and roentgenologic primary foci in the lungs. This seemed to be more evident in males than in females.

A comparison of the vaccinated and the controls revealed a difference in the rate in the two groups, as follows: group A, true primary tuberculosis of the lungs and hilar lymph nodes, with or without skin manifestations, 1 to 137; group B, tuberculosis of glands, skin and soft tissues, 1 to 6; group C, pleuritis, pulmonary infiltration, and tuberculosis of the bones, joints and eyes, 1 to 9, and group D, tuberculous meningitis, miliary tuberculosis and destructive pulmonary tuberculosis, 1 to 27.

For all forms of tuberculosis, the difference in the rate between the vaccinated and the controls was 1 to 23. The difference in death rate from tuberculosis was 1 to 45. The author states, "The value of such rates will be very limited from the statistical point of view, but they bring out points of considerable interest."

Evidence is presented that the local reaction following vaccination determines to a great extent the subsequent tuberculin reaction. The degree of the tuberculin reaction determines the duration of the vaccination allergy, but is not related to resistance on superinfection.

Reinfection tuberculosis is considered in persons in whom the von Pirquet reaction increases at least 2 mm. and in whom the Mantoux test with 1 mg. of old tuberculin increases by 20 mm. The validity of these criteria for reinfection will not be argued, but since they represent but a small fraction of the actual state of reinfection, the use of these observations may be misleading.

In a study of some 900 cases by the reviewer, three physicians read the tuberculin reactions in control and vaccinated children up to 18 years of age. There was no notable difference in the type of reactions of the two groups.

The author prefers the intradermal to the multiple puncture method, his comparison being made on 1,749 persons vaccinated by the intracutaneous method against 51 by the multiple puncture method. This would hardly seem a fair comparison, especially since the author states, "I have no proof that the other factors mentioned (contact with tuberculosis, etc.) are uniformly distributed in the two groups."

The data presented are unequivocal concerning the harmlessness of BCG vaccination. The evidence is most impressive regarding the efficacy of BCG vaccination, both in regard to morbidity and mortality from tuberculosis. Both physicians and statisticians will find this book of great interest.

**Modern Trends in Psychological Medicine, 1948.** Edited by Noel G. Harris, M.D., F.R.C.P., D.P.M., Physician for Psychological Medicine, Middlesex Hospital, London. Cloth. Price, $10. Pp. 450, with 25 illustrations. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 E. 33d St., New York 16, 1948.

In nineteen comprehensive chapters here is a presentation of the present status of psychiatry and what we may expect of it. The editor and the several authors are outstanding. Only one chapter deals with a nosologic group; that one is on psychopathic personality, and it leaves something to be desired in its failure to recognize some of the psychodynamic contributions of Karpman and Maughs, for instance. The other chapters deal with psychosomatic medicine, the physiology of emotions, causative factors in mental disturbances, electrophysiology, diagnostic measures, child guidance, marriage and family life, group therapy, psychotherapy, physical treatment, personnel selection, rehabilitation, mental hygiene in industry and the relation of psychiatric medicine to world affairs. The approach throughout is broad; the doctrinaire attitude is conspicuous by its absence.

The chapters are carefully prepared, and each is followed by a bibliography. The printing is excellent, and there are twenty-five illustrations. The volume is an excellent presentation of the present state and prospects of a specialty which is developing rapidly.

**Fractures and Orthopaedic Surgery for Nurses and Masseuses.** By Arthur Naylor, Ch.M., M.B., M.Sc., Orthopaedic Surgeon, Bradford Municipal General (St. Luke's) Hospital, Bradford, England. Foreword by Ernest Finch, M.D., M.S., F.R.C.S., Consulting Surgeon, Royal Infirmary and Hospital, Sheffield, England. Second edition. Cloth. Price, $5. Pp. 296, with 251 illustrations. The Williams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2, 1948.

It is to help nurses and masseuses to understand and follow the principles of orthopedics that Mr. Naylor has written this book. He shows the nurse how the principles are applied in orthopedic surgery and as a supplement to her lectures in surgery. The introduction of penicillin has necessitated alterations in the text of this, the second edition.

The success of orthopedic surgery is largely dependent on the knowledge, skill and care of the nurses and physical therapists to whom after-care and treatment are delegated. The student nurse has often only a bare minimum of instruction in orthopedic surgery; yet approximately one fifth of her surgical work will be concerned with this branch of surgery.

This book will be useful to registered nurses and to those who intend to undertake or are engaged in nursing in orthopedic wards, or at special hospitals or in the public health services. It should be of value to physical therapists as a general outline of the clinical and surgical aspects of orthopedic conditions

The author discusses orthopedic apparatus; operating room technic; methods of correction of deformity; amputations; fractures and dislocations; diseases of bones and joints, diseases of the soft tissues; congenital deformities; diseases of the epiphyses; peripheral vascular lesions; orthopedic surgery of paralysis, and diseases of the spine and foot.

**Poisons: Their Isolation and Identification.** By Frank Banford, B.Sc. Revised by C. P. Stewart, M.Sc., Ph.D., Senior Biochemist, Royal Infirmary, Edinburgh. With a foreword by Professor Sydney Smith, C. B. E., M.D., F.R.C.P., Regius Professor of Forensic Medicine, University of Edinburgh, Edinburgh. Second edition. Cloth. Price, $5. Pp. 304, with 23 illustrations. The Blakiston Co., 1012 Walnut St., Philadelphia 5, 1947.

The book is offered as a practical guide for the chemical analysis of various poisons. As a laboratory manual for the qualitative analysis of these poisons, it goes into much detail with respect to technic and appears to be written from first hand experience.

The poisons are classified into various groups which are determined by the methods used for their isolation and separation. The author devotes a chapter or two to the discussion of each group and the poisons it contains. The groups are the volatile poisons—that is, those which distil with a current of steam—the metallic poisons, the acid, alkali or irritating salt type, the nonvolatile basic organic poisons, the nonvolatile nonbasic organic poisons and a miscellaneous group which require various special methods for isolation.

A systematic scheme is presented for the identification of alkaloids which is based on their reaction with various precipitation and color reagents. A chapter is also devoted to a systematic procedure for the separation and identification of various nonbasic organic poisons.

The book, although intended as a laboratory manual, is written in a style which makes for easy and interesting reading. It contains numerous helps and suggestions for the practicing toxicologist, such as a brief outline of postmortem signs, as indications of the cause of poisoning.

**Nutrition and Physical Fitness.** By L. Jean Bogert, Ph.D., Instructor in Experimental Medicine, Yale Medical School, New Haven, Conn. Fifth edition. Cloth. Price, $4.25. Pp. 610, with 97 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London W.C. 2, 1949.

The author states that the purpose of this book is threefold: (1) to gather into a single volume information useful in meeting everyday nutritional problems, which has been gleaned from the fields of food composition and economics, the chemistry and physiology of body processes, dietetics and medicine; (2) to make this information available to a comparatively large group by presenting it in such simple language as to be understandable to those with no previous knowledge of chemistry, and (3) to point out, in every instance possible, how such knowledge may be utilized for preventing ill health and promoting a high degree of physical fitness.

Part I includes a discussion of sugars, starches, proteins, fats, milk and milk products, fruits and vegetables. The different varieties of these food groups, their chemical properties and their place in the diet are presented in detail.

Part II is concerned with the nutritional needs of the body. There seems to be some burdensome repetition between these two sections. For example, in part I complete and incomplete proteins are elaborated on at some length. This is repeated in part II. The book might seem better organized if the order of these two sections were reversed.

In the text tables are included which give the approximate ascorbic acid, thiamine and vitamin A content of typical foods in terms of average servings. To be consistent, it would be logical to prepare similar tables for the other important nutrients. This type of information is more practical than tables of percentage composition.

Part III is a section on physiology, dealing chiefly with digestion, metabolism and excretion. Part IV contains helpful facts about meal planning, food economics, food fads and fancies, and recent trends in our dietary habits. The last chapters are on diet for special conditions such as obesity, underweight and pregnancy. The dietary needs during childhood are also presented. The appendix includes a table of food values, tables of ideal heights and weights for adults and children and a list of

100-calory portions of common foods, which material is becoming less popular with nutritionists because it is impractical to use in teaching.

Each chapter concludes with questions and problems for classwork and lists of suggested readings. The textbook can be recommended for use in teaching a college course in nutrition or as a reference book for a course in nutrition for nurses, social workers or teachers. High school teachers of biology or health education would also find practical information in it suitable for integration in their classwork.

**Symposium on Radioiodine July 28-30, 1948.** Brookhaven Conference Report, BNL-C-5. Paper. Price, $1.50. Pp. 114, with 27 illustrations. Brookhaven National Laboratory, Associated Universities, Inc., Upton, L. I., N. Y., [n.d.]

The volume opens with a historical review of the use of iodine in the treatment of diseases of the thyroid and moves rapidly to modern times and the first use of $I^{131}$. The remainder of the volume is divided into sections. These sections correspond to the various component sessions of the symposium.

The first session was on physiology and was opened with an interesting paper on $I^{131}$ as a tracer in thyroid neoplasm. A paper of note in the physiology section is the mechanism of action of antithyroid drugs. In another paper the biologic effect of radiation by radioactive iodine is well considered. The second session was a session on laboratory topics. Several papers of considerable merit are contained herein, notably one on standardization of radioactive iodine and another on calculation of dosage in radioiodine therapy. The third portion of the volume is devoted to the proceedings of the session on hyperthyroidism. In this section most of the progress in the treatment of hyperthyroidism and toxic goiter by $I^{131}$ is outlined. The fourth section of the volume is devoted to pathology and allied topics. Outstanding in this section are papers on histologic types of thyroid carcinoma and their respective abilities to store radioactive $I^{131}$. Several technics of radioautography are outlined in this section and are well worth consulting.

The final section of the volume is devoted to a study of the treatment of carcinoma of the thyroid. In the two papers that comprise this section there are outlined several methods of enhancing the uptake of $I^{131}$ by metastatic thyroid neoplasm.

The volume should be read by everyone who works with radioactive materials, but it could also be consulted profitably by any practicing physician.

**Collateral Circulation (Anatomical Aspects).** By Daniel P. Quiring, Ph.D., Head of the Anatomy Division, Cleveland Clinic Foundation, Cleveland, Ohio. Cloth. Price, $5. Pp. 142, with 61 illustrations, 46 in color by Margaret Holman. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1949.

The author offers a convenient reference book to the chief arterial and venous collateral channels of the human body. Although a brief review is given of the major circulatory pathways as found in standard anatomic textbooks, emphasis is placed on the communicating shunts as demonstrated in original dissections and as gleaned from the literature. The author has correlated in a refreshing, simple fashion material drawn from anatomic, physiologic and clinical sources as it relates to the problem of blood circulation. As such the study should hold wide interest. Easily accessible are the chief cross connections which develop in the vascular system on occlusion of vessels normally responsible for the circulation to a body part. A short historical review is followed by a lengthier note on the development of blood vessels. Embryology and comparative anatomy are drawn on and the author concludes that inheritance and hemodynamic forces incident to blood flow determine the pattern of the vascular tree. Blood goes where it is needed.

A philosophic discussion of the development of collateral pathways follows. Of clinical interest particularly is the differentiation of changes incident to sudden and gradual occlusion of main stems. In the latter situation the collateral circulation depends primarily on the state of the walls of the anastomosing channels and in lesser degree on their number and their diameter, while in sudden occlusion the primary factors are the number and extent of the anastomoses, secondarily the nature of the walls.

The simplified line color diagrams with which the book abounds are of great help in portraying the three dimensional effect incident to these cross connections. This is true in depicting the four major collateral pathways through which blood is returned to the heart from the lower extremities and trunk. Color drawings on skeletal relief are used effectively to demonstrate the by-passes found in head and neck, trunk, shoulder and upper extremity, and lower extremity. A separate section is devoted to cardiac circulation. Of particular merit is the discussion relative to collateral pathways about the carotid arteries, adrenal vessels, vena cava, leg veins, and the important vertebral veins. The integration of this knowledge finds clinical application in understanding the fate of parts following vascular accidents, the dispersion of infections and the metastases of cancer.

This enlightening emphasis on collateral channels warrants attention from the anatomist and physiologist in understanding the basic pattern and function of this circulation, and should be of value to the clinician in the practical application of this knowledge.

**Principles of Health Education Applied.** By Clifford Lee Brownell, Ph.D., Chairman, Health Education and Physical Education Department, Teachers College, Columbia University, New York, N. Y. McGraw-Hill Series in Health Education, Physical Education, and Recreation. Clifford Lee Brownell, Consulting Editor. Cloth. Price, $3.75. Pp. 366, with 16 illustrations. McGraw-Hill Book Company, Inc., 330 W. 42d St., New York 18; Aldwych House, Aldwych, London, W.C. 2, 1949.

Inaugurating a new series in health education, physical education and recreation, this volume is addressed specifically to students of health education and generally to all those with a participating interest in this subject. These, of course, range from teachers through administrative officers to parents and the general public that foots the educational bill.

In most part, Brownell does an excellent job of presenting both sides of the numerous highly debatable phases of health education. However, there is some evidence that there has been insufficient collaboration with the medical profession on some phases of the volume. Specifically, Brownell accepts without reservation the spurious claims based on prejudiced or even deliberately false analyses of World War II draft statistics, and in the face of evidence such as that presented by Freedman or in the Brookings report he writes on page 31 of the "appalling number of young men found unfit for military service" and on page 274 offers a quotation emphasizing the same serious misunderstanding. Although Brownell does offer a rationalization of this situation on page 32, it is considerably less emphatic than his "pro" discussion.

After four chapters of orientation on the general problem of health and health education, the book treats specific subjects such as school organizations for health, health services, education of the handicapped, health and safety instruction and professional preparation for health education. Understandably, there is a strong chapter on the relationships between health education and physical education. This contains adequate recognition of the necessity for proper medical supervision of physical education activities.

Perhaps the only serious omission in the volume is consideration of sex education in relation to health education.

The book is written in a friendly style, and of special value are summaries at the end of each chapter plus lists of questions and problems for discussion as well as selected references. Physicians will find it of interest as a source of helpful background for their contacts with medical aspects of school health education and services.

**Hypnotism Comes of Age: Its Progress from Mesmer to Psychoanalysis.** By Bernard Wolfe and Raymond Rosenthal. Cloth. Price, $3. Pp. 272. The Bobbs-Merrill Co., 724-730 N. Meridian St., Indianapolis 7, 1948.

With the development of hypnonarcosis as an established technic by investigations of psychiatric disturbances during the war, much interest has been aroused in the method. The volume here considered approaches the subject from the special point of view of the psychoanalyst and indicates the manner in which the two technics can be integrated for application. One of the best chapters is entitled "The Layman Asks Some Questions"; this does give authentic replies to most of the questions that arise in the minds of average readers.

**Krebsmetastasen.** Von Dr. med. Hans E. Walther, leitender Arzt der Röntgenabteilung des Schwesternhauses vom roten Kreuz in Zürich. Vorwort von Prof. Dr. H. von Meyenburg, Direktor des Pathologischen Institutes in Zürich. Cloth. Price, 60 Swiss francs; $18. Pp. 560, with 359 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel 10; Imported by Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1948.

The physician's interest in patients with cancer frequently diminishes in proportion to the spread of cancer from its original site to other organs, because medicine or surgery offers little to relieve metastatic cancer and radiation therapy is at best only palliative. Neoplastic metastases, therefore, are seldom the subject of intensive scientific study.

This book, written in German by a Swiss radiologist, attempts to fill this gap in the medical literature and is based on many years of clinical experience and extensive study of pathologic-anatomic material. Postmortem examinations on 3,433 patients with cancer form the basis for the author's thoughtful monograph. An attempt is made to uncover guiding principles which govern the spread of cancer and thus to facilitate the evaluation of the prognosis in different types of malignant growths.

The book is divided into two main parts. In the general section, the morphologic and biologic qualities of the cancer cells and the grading of malignancies are explained and the author's "malignancy index" described. The latter is determined by adding the continuous extension ($c$) of the tumor, its lymphatic spread ($l$) and its hematogenous ($h$) spread, all of which are arbitrarily evaluated in a relation of 1:2:10 and divided by 100. Therefore, the formula of the "malignancy index" is as follows:

$$M = \frac{c + 2l + 10h}{100}$$

According to the author, the occurrence of metastases follows closely the anatomic design of the blood vascular system and can be predicted if the primary site is known. Conversely, if neoplastic metastases are found in various organs, the site of the primary lesion can usually be assumed with a high degree of certainty. The author is convinced that all metastases to lymph nodes are "regional." They are either "primary," if they are localized in the draining area of the primary tumor, or "secondary," if the tributary organ is invaded by way of the blood system. The author does not accept the theory of lymphatic connections between two different organs. The possibility of "retrograde" lymphatic spread is refuted by the author, and so this controversy is continued. The chapter on diagnostic methods of neoplastic metastases is short, and cytologic methods are discussed. The Papanicolaou stain, chiefly important for the diagnosis of primary lesions, is not mentioned.

In the special section, the frequency of different types of malignant growths in the various organs is described, and growth tendencies and modes of spread analyzed. Statistical evaluations support the author's theories.

The book is well written and offers a wealth of material for thought. It is a fascinating piece of work by an earnest and experienced clinician who expresses his ideas in a convincing manner. Minor differences of opinion as to the frequency of metastases in different organs do not depreciate the value of a readable and highly recommendable work.

***Morfologiczne badania porównawcze nad rola ukladu mezenchymalnego a w szczególności sercowo-naczyńiowego w zapaleniu hiperergicznym i gośćcowym.*** [By] Kazimierz Stojalowski. [Comparative Morphologic Studies on Role of Mesenchymal System and Especially of Cardiovascular System, on Hyperergic and Rheumatic Inflammation.] Poznańskie Towarzystwo Przyjaciól Nauk. Prace Komisji Lekarskiej Tom VI, Zeszyt 1. Paper. Pp. 159, with 15 illustrations. Poznańskie Towarzystwo Przyjaciól Nauk, ul. Sew. Mielżyńskiego 26/27, Posen, 1947.

This monograph deals with the author's microscopic studies of postmortem material of the Pathologic Institute of the University of Poznań (Poland). An attempt is made to bring into correlation the microscopic alterations in rheumatic fever as regards the connective tissue and the circulatory system, and the analogy between rheumatic fever and experimental hyperergic inflammation. Experiments performed by the author represent a modification of Klinge's experiments. The modification consisted in sensitizing rabbits by human rather than horse serum. Serum obtained from a case of acute rheumatic fever and from a case of asthma was injected into the knee joint of a sensitized rabbit. A striking resemblance was noted in the histopathologic alterations in experimental hyperergic inflammation and in those of the rheumatic fever. The distribution of the lesions throughout the mesenchymal system was much the same in both conditions. The author concludes that the lesions in the mesenchymal system seen in rheumatic fever can only be explained on the basis of alterations in its immunobiologic reaction; that therefore the basis of rheumatic fever is a hyperergic mechanism.

The concept is not new. The work does not represent anything very original or significant. It should, however, be of some interest to the pathologist and the internist.

**Practical Methods in Biochemistry.** By Frederick C. Koch, Director of Biochemical Research, Armour & Co., Chicago, and Martin E. Hanke, Associate Professor of Biochemistry, University of Chicago, Chicago. Fifth edition. Cloth. Price, $3. Pp. 419, with 22 illustrations. William Wood & Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

The present edition of this laboratory manual has kept abreast of new developments by including technics recently developed in biochemistry. The material in the book has been expanded by a greater elaboration of manometric methods, the inclusion of microbiologic procedures for vitamins and amino acids and the incorporation of new or revised colorimetric and fluorometric methods.

The manual is intended to present to medical students qualitative and quantitative methods of analysis used on cell constituents and body fluids. The experiments are classified into sections concerning The Chemistry of Cell Constituents, The Chemistry of the Digestive Tract, and Blood and Urine. The appendix includes instructions for preparing the reagents and solutions used. The experiments are clearly described in detail.

Undoubtedly, this is one of the better small books available for its intended purpose in this field.

**Subacute Bacterial Endocarditis.** By Emanuel Libman, M.D., and Charles K. Friedberg, M.D., Adjunct Physician, The Mount Sinai Hospital, New York. Edited by Henry A. Christian, A.M., M.D., LL.D. [Reprinted from Oxford Loose-Leaf Medicine with the same page numbers as in that work.] Second edition. Cloth. Price, $3.50. Pp. 346(1)-346(113), with 19 illustrations. Oxford University Press, 114 Fifth Ave., New York 11, 1948.

Dr. Friedberg has fully revised this valuable volume, the earlier result of a lifetime of study of bacterial endocarditis by the late Dr. Libman. The advent of a satisfactory therapy has necessitated emphasis on early diagnosis and treatment. The necessity for a bacterial diagnosis is emphasized by the fact that organisms not susceptible to penicillin may be treated with streptomycin or other more recent antibiotics. This is an excellent study of bacterial endocarditis and almost necessary for those not fully familiar with the subject who may occasionally treat this disease.

**Organic Chemistry with Applications to Pharmacy and Medicine.** By Eldin V. Lynn, Ph.D., Professor of Chemistry, Massachusetts College of Pharmacy, Boston. Third edition. Fabrikoid. Price, $5. Pp. 355. Lea and Febiger, 600 S. Washington Square, Philadelphia 6, 1948.

This book was written to serve as a textbook for the teaching of organic chemistry to students of pharmacy and medicine. In general, it is organized as are most textbooks of organic chemistry, treating the aliphatic hydrocarbons and their substitution products in the first chapters, followed by material on the aromatic hydrocarbons and their substitution products. Several chapters are devoted to the condensed nuclei and the various heterocyclic systems and a number of chapters deal with such special topics as alkaloids, proteins, enzymes, glycosides and resins.

Each of the chapters has a general introduction dealing with nomenclature and the general physical properties of the class involved, followed by sections on the preparation of the members of the class and the various group reactions. The unique feature of the textbook is that portion of each chapter which treats the chemistry of compounds found in the United States Pharmacopoeia, the National Formulary and New and Nonofficial Remedies.

The discussions of the subjects are rather brief and are almost outline in form; however, most of the fundamental reactions and general principles are presented. The third revision was written to include the more recent advances in drug therapy as found in the last editions of U.S.P., N.F. and N.N.R.

# Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

## DEFERMENT OF CHILDBEARING

*To the Editor:*—How long is it safe for a couple to put off having children? Some of my confrères say that after three years the chance of barrenness is much greater. M.D., Kentucky.

Answer.—How long it is safe for a couple to put off having children will depend in large measure on the age of the wife. If she is in the early twenties, postponement of conception for three years or so would be generally safe. On the other hand, if she is 35 or over, it would not be safe; and even if she were 30 it would be unwise. The reason for this lies in the aging factor. Thus, the incidence of sterility due to such conditions as fibromas, endometriosis and ovarian dysfunction is greater at 35 than at 25 and increases slightly year by year after the latter age. Unpublished data, moreover, indicate that even in the absence of demonstrable pathologic lesions, the average time for conception to take place after marriage (no contraception being used) is longer in women in the thirties than in those in the twenties. This important problem is currently the subject of wide study, but publications covering the specific question cannot be cited at present.

## SARCOIDOSIS

*To the Editor:*—A 23 year old Czech who had inflammation of the lungs during military service without being confined to bed has had sarcoidosis pulmonum for over a year. The patient's illness is not getting better and his strength is decreasing. Medical examination of the lungs shows a tumorous condition in the lower part on both sides of the lungs, considered to be sarcoidosis pulmonum. M.D., Czechoslovakia.

Answer.—The cause of sarcoidosis is not known. The histopathologic aspects of the condition closely resemble those of noncaseating tuberculosis. The disease can involve almost any organ. It seems, however, to have a predilection for lymph nodes, skin, the pulmonary parenchyma, the spleen and the liver. It may also cause inflammatory changes in the eyes and the salivary glands. At times it will cause characteristic changes in the small bones of the hands.

Some workers feel that sarcoidosis represents a form of tuberculosis; others have argued against tuberculosis as an etiologic factor. This has led to some confusion. If lesions of the skin or enlarged peripheral lymph nodes are found, it is advisable to obtain a specimen for biopsy. A preferred method of performing such a study is to save half of an excised lymph node for microscopic study and the other half for culture or injection into guinea pigs. Needle biopsy of the liver has also been suggested for microscopic diagnosis when other methods of examination fail.

A patient may have bilaterally large hilar lymph nodes. At times the term "potato" lymph nodes has been given to these mediastinal nodes because of their size. An infiltration may be seen throughout the parenchyma of the lung which may resemble that usually seen in tuberculosis, and yet it may be impossible to find tubercle bacilli in the sputum or the gastric contents. More frequently, the infiltration involves the basal or midlung fields, with symmetric distribution, and at times there is a universally distributed fine nodular or flocculent lesion visible in roentgenograms of the thorax. Results of the single strength and second strength tuberculin tests should be negative. Possibly the outstanding clinical feature is that the patient may have extensive changes in the pulmonary parenchyma or the hilar lymph nodes and still appear to be well and to have few symptoms.

In general, the prognosis in sarcoidosis is good, but evidences of the disease usually persist for a few years. Deaths rarely have been attributed to the condition. At this time there is no medicine that is of definite value in sarcoidosis. Vitamin D and chaulmoogra oil have been tried by various investigators. Roentgen therapy has yielded equivocal results. Streptomycin has shown little promise. The most important phase of treatment is directed toward an adequate amount of rest. The lesion in the thorax should be observed by means of serial roentgenograms of the thorax under the supervision of the patient's physician, and, if progress is unfavorable, additional efforts to detect tubercle bacilli should be undertaken.

## TREATMENT OF HICCOUGH

*To the Editor:*—A 72 year old white widower, with long-standing severe pulmonary emphysema, cor pulmonale of a moderate degree, secondary polycythemia and mild benign prostatic hypertrophy, has bilateral indirect inguinal hernia the size of lemons. In the past, his abdomen has been entered on three occasions for the removal of appendix and gallbladder and repair of the abdominal wall from the resultant injury. He has had gradually increasing dyspnea for several years and episodes of mild cardiac decompensation, controlled by rest, oxygen and digitalis. Depending on his water balance and other unknown factors, his urine has occasionally shown small amounts of albumin, and his blood, moderate nitrogen retention. Carbon dioxide–combining power stays at about 100 volumes per cent. The degree of his cyanosis is startling. He has had hiccoughs intermittently since September 1947. Periodic at first, they are now almost constant. When they are at a minimum, he does fairly well, getting out to an occasional motion picture and for an automobile ride. When they are severe, he can only lie in bed at home in an oxygen tent. For the hiccoughs the following therapeutic efforts have been made: (1) all the old home remedies; (2) meperidine hydrochloride; (3) methadone; (4) atropine; (5) barbiturates; (6) paraldehyde; (7) ether; (8) alcohol; (9) oxygen by all routes of administration except intravenous; (10) bleeding to a hematocrit reading of 42 per cent; (11) mercurophylline administered intravenously and intramuscularly; (12) various expectorants; (13) aminophylline by all routes; (14) myanesin® (3-ortho-toloxy-1, 2-propanediol); (15) succinic acid administered intravenously; (16) ephedrine; (17) epinephrine; (18) antihistaminics; (19) autogenous vaccine, and (20) penicillin aerosol. Since his breathing reserve is so low and since both leaves of the diaphragm are involved, it has been felt that phrenic nerve interruption would be too dangerous. Because of his large hernias and the multiple previous laparotomies, pneumoperitoneum has been felt to be contraindicated. An abdominal belt was not of benefit. This patient's hiccoughs are literally killing him. Do you have any suggestions as to what might stop them? Christopher Parnall Jr., M.D., Rochester. N, Y.

Answer.—The great deterrent to treatment in this case is the very high carbon dioxide–combining power. The time-honored treatment of hiccough is carbon dioxide inhalations and lastly operation on the phrenic nerve. It is assumed that carbon dioxide was not used in this case because of the exceedingly high carbon dioxide–combining power.

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Operation on the phrenic nerve should be seriously considered. Certainly the respiratory function is greatly reduced by the diaphragmatic spasm and it is doubtful whether it would be much further reduced by paralysis of one side of the diaphragm. Obviously the phrenic nerve should be crushed on the side in which the spasm occurs. At any rate if the hiccough is in fact killing the patient almost any procedure that offers even a slight hope is justified.

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Answer.—1. An accurate statistical answer is not available. In general, diagnosis in early pregnancy is desirable because it allows time for the institution of collapse therapy procedures. In late pregnancy it is often difficult to start such procedures and they are frequently deferred until delivery has taken place.

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**Krebsmetastasen.** Von Dr. med. Hans E. Walther, leitender Arzt der Röntgenabteilung des Schwesternhauses vom roten Kreuz in Zürich. Vorwort von Prof. Dr. H. von Meyenburg, Direktor des Pathologischen Institutes in Zürich. Cloth. Price, 60 Swiss francs; $18. Pp. 560, with 359 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel 10; Imported by Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1948.

The physician's interest in patients with cancer frequently diminishes in proportion to the spread of cancer from its original site to other organs, because medicine or surgery offers little to relieve metastatic cancer and radiation therapy is at best only palliative. Neoplastic metastases, therefore, are seldom the subject of intensive scientific study.

This book, written in German by a Swiss radiologist, attempts to fill this gap in the medical literature and is based on many years of clinical experience and extensive study of pathologic-anatomic material. Postmortem examinations on 3,433 patients with cancer form the basis for the author's thoughtful monograph. An attempt is made to uncover guiding principles which govern the spread of cancer and thus to facilitate the evaluation of the prognosis in different types of malignant growths.

The book is divided into two main parts. In the general section, the morphologic and biologic qualities of the cancer cells and the grading of malignancies are explained and the author's "malignancy index" described. The latter is determined by adding the continuous extension ($c$) of the tumor, its lymphatic spread ($l$) and its hematogenous ($h$) spread, all of which are arbitrarily evaluated in a relation of 1:2:10 and divided by 100. Therefore, the formula of the "malignancy index" is as follows:

$$M = \frac{c + 2l + 10h}{100}$$

According to the author, the occurrence of metastases follows closely the anatomic design of the blood vascular system and can be predicted if the primary site is known. Conversely, if neoplastic metastases are found in various organs, the site of the primary lesion can usually be assumed with a high degree of certainty. The author is convinced that all metastases to lymph nodes are "regional." They are either "primary," if they are localized in the draining area of the primary tumor, or "secondary," if the tributary organ is invaded by way of the blood system. The author does not accept the theory of lymphatic connections between two different organs. The possibility of "retrograde" lymphatic spread is refuted by the author, and so this controversy is continued. The chapter on diagnostic methods of neoplastic metastases is short, and cytologic methods are discussed. The Papanicolaou stain, chiefly important for the diagnosis of primary lesions, is not mentioned.

In the special section, the frequency of different types of malignant growths in the various organs is described, and growth tendencies and modes of spread analyzed. Statistical evaluations support the author's theories.

The book is well written and offers a wealth of material for thought. It is a fascinating piece of work by an earnest and experienced clinician who expresses his ideas in a convincing manner. Minor differences of opinion as to the frequency of metastases in different organs do not depreciate the value of a readable and highly recommendable work.

**Morfologiczne badania porównawcze nad rola ukladu mezenchymalnego a w szczególności sercowo-naczyniowego w zapaleniu hiperergicznym i gośćcowym.** [By] Kazimierz Stojalowski. [Comparative Morphologic Studies on Role of Mesenchymal System and Especially of Cardiovascular System, on Hyperergic and Rheumatic Inflammation.] Poznańskie Towarzystwo Przyjaciół Nauk. Prace Komisji Lekarskiej Tom VI. Zeszyt 1. Paper. Pp. 159, with 15 illustrations. Poznańskie Towarzystwo Przyjaciół Nauk, ul. Sew. Mielżyńskiego 26/27, Posen, 1947.

This monograph deals with the author's microscopic studies of postmortem material of the Pathologic Institute of the University of Poznań (Poland). An attempt is made to bring into correlation the microscopic alterations in rheumatic fever as regards the connective tissue and the circulatory system, and the analogy between rheumatic fever and experimental hyperergic inflammation. Experiments performed by the author represent a modification of Klinge's experiments. The modification consisted in sensitizing rabbits by human rather than horse serum. Serum obtained from a case of acute rheumatic fever and from a case of asthma was injected into the knee joint of a sensitized rabbit. A striking resemblance was noted in the histopathologic alterations in experimental hyperergic inflammation and in those of the rheumatic fever. The distribution of the lesions throughout the mesenchymal system was much the same in both conditions. The author concludes that the lesions in the mesenchymal system seen in rheumatic fever can only be explained on the basis of alterations in its immunobiologic reaction; that therefore the basis of rheumatic fever is a hyperergic mechanism.

The concept is not new. The work does not represent anything very original or significant. It should, however, be of some interest to the pathologist and the internist.

**Practical Methods in Biochemistry.** By Frederick C. Koch, Director of Biochemical Research, Armour & Co., Chicago, and Martin E. Hanke, Associate Professor of Biochemistry, University of Chicago, Chicago. Fifth edition. Cloth. Price, $3. Pp. 419, with 22 illustrations. William Wood & Co., Mount Royal and Guilford Aves., Baltimore 2, 1948.

The present edition of this laboratory manual has kept abreast of new developments by including technics recently developed in biochemistry. The material in the book has been expanded by a greater elaboration of manometric methods, the inclusion of microbiologic procedures for vitamins and amino acids and the incorporation of new or revised colorimetric and fluorometric methods.

The manual is intended to present to medical students qualitative and quantitative methods of analysis used on cell constituents and body fluids. The experiments are classified into sections concerning The Chemistry of Cell Constituents, The Chemistry of the Digestive Tract, and Blood and Urine. The appendix includes instructions for preparing the reagents and solutions used. The experiments are clearly described in detail.

Undoubtedly, this is one of the better small books available for its intended purpose in this field.

**Subacute Bacterial Endocarditis.** By Emanuel Libman, M.D., and Charles K. Friedberg, M.D., Adjunct Physician, The Mount Sinai Hospital, New York. Edited by Henry A. Christian, A.M., M.D., LL.D. [Reprinted from Oxford Loose-Leaf Medicine with the same page numbers as in that work.] Second edition. Cloth. Price, $3.50. Pp. 346(1)-346(113), with 19 illustrations. Oxford University Press, 114 Fifth Ave., New York 11, 1948.

Dr. Friedberg has fully revised this valuable volume, the earlier result of a lifetime of study of bacterial endocarditis by the late Dr. Libman. The advent of a satisfactory therapy has necessitated emphasis on early diagnosis and treatment. The necessity for a bacterial diagnosis is emphasized by the fact that organisms not susceptible to penicillin may be treated with streptomycin or other more recent antibiotics. This is an excellent study of bacterial endocarditis and almost necessary for those not fully familiar with the subject who may occasionally treat this disease.

**Organic Chemistry with Applications to Pharmacy and Medicine.** By Eldin V. Lynn, Ph.D., Professor of Chemistry, Massachusetts College of Pharmacy, Boston. Third edition. Fabrikoid. Price, $5. Pp. 355. Lea and Febiger, 600 S. Washington Square, Philadelphia 6, 1948.

This book was written to serve as a textbook for the teaching of organic chemistry to students of pharmacy and medicine. In general, it is organized as are most textbooks of organic chemistry, treating the aliphatic hydrocarbons and their substitution products in the first chapters, followed by material on the aromatic hydrocarbons and their substitution products. Several chapters are devoted to the condensed nuclei and the various heterocyclic systems and a number of chapters deal with such special topics as alkaloids, proteins, enzymes, glycosides and resins.

Each of the chapters has a general introduction dealing with nomenclature and the general physical properties of the class involved, followed by sections on the preparation of the members of the class and the various group reactions. The unique feature of the textbook is that portion of each chapter which treats the chemistry of compounds found in the United States Pharmacopoeia, the National Formulary and New and Nonofficial Remedies.

The discussions of the subjects are rather brief and are almost outline in form; however, most of the fundamental reactions and general principles are presented. The third revision was written to include the more recent advances in drug therapy as found in the last editions of U.S.P., N.F. and N.N.R.

# Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

## DEFERMENT OF CHILDBEARING

**To the Editor:**—How long is it safe for a couple to put off having children? Some of my confrères say that after three years the chance of barrenness is much greater.
M.D., Kentucky.

ANSWER.—How long it is safe for a couple to put off having children will depend in large measure on the age of the wife. If she is in the early twenties, postponement of conception for three years or so would be generally safe. On the other hand, if she is 35 or over, it would not be safe; and even if she were 30 it would be unwise. The reason for this lies in the aging factor. Thus, the incidence of sterility due to such conditions as fibromas, endometriosis and ovarian dysfunction is greater at 35 than at 25 and increases slightly year by year after the latter age. Unpublished data, moreover, indicate that even in the absence of demonstrable pathologic lesions, the average time for conception to take place after marriage (no contraception being used) is longer in women in the thirties than in those in the twenties. This important problem is currently the subject of wide study, but publications covering the specific question cannot be cited at present.

## SARCOIDOSIS

**To the Editor:**—A 23 year old Czech who had inflammation of the lungs during military service without being confined to bed has had sarcoidosis pulmonum for over a year. The patient's illness is not getting better and his strength is decreasing. Medical examination of the lungs shows a tumorous condition in the lower part on both sides of the lungs, considered to be sarcoidosis pulmonum.
M.D., Czechoslovakia.

ANSWER.—The cause of sarcoidosis is not known. The histopathologic aspects of the condition closely resemble those of noncaseating tuberculosis. The disease can involve almost any organ. It seems, however, to have a predilection for lymph nodes, skin, the pulmonary parenchyma, the spleen and the liver. It may also cause inflammatory changes in the eyes and the salivary glands. At times it will cause characteristic changes in the small bones of the hands.

Some workers feel that sarcoidosis represents a form of tuberculosis; others have argued against tuberculosis as an etiologic factor. This has led to some confusion. If lesions of the skin or enlarged peripheral lymph nodes are found, it is advisable to obtain a specimen for biopsy. A preferred method of performing such a study is to save half of an excised lymph node for microscopic study and the other half for culture or injection into guinea pigs. Needle biopsy of the liver has also been suggested for microscopic diagnosis when other methods of examination fail.

A patient may have bilaterally large hilar lymph nodes. At times the term "potato" lymph nodes has been given to these mediastinal nodes because of their size. An infiltration may be seen throughout the parenchyma of the lung which may resemble that usually seen in tuberculosis, and yet it may be impossible to find tubercle bacilli in the sputum or the gastric contents. More frequently, the infiltration involves the basal or midlung fields, with symmetric distribution, and at times there is a universally distributed fine nodular or flocculent lesion visible in roentgenograms of the thorax. Results of the single strength and second strength tuberculin tests should be negative. Possibly the outstanding clinical feature is that the patient may have extensive changes in the pulmonary parenchyma or the hilar lymph nodes and still appear to be well and to have few symptoms.

In general, the prognosis in sarcoidosis is good, but evidences of the disease usually persist for a few years. Deaths rarely have been attributed to the condition. At this time there is no medicine that is of definite value in sarcoidosis. Vitamin D and chaulmoogra oil have been tried by various investigators. Roentgen therapy has yielded equivocal results. Streptomycin has shown little promise. The most important phase of treatment is directed toward an adequate amount of rest. The lesion in the thorax should be observed by means of serial roentgenograms of the thorax under the supervision of the patient's physician, and, if progress is unfavorable, additional efforts to detect tubercle bacilli should be undertaken.

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**To the Editor:**—I am interested in comparing the effects of tuberculosis in pregnant women with the effects of coccidioidomycosis in pregnant women. Does the eventual outcome of tuberculosis have any correlation with the trimester of pregnancy in which the disease is diagnosed? Is there a higher incidence of miliary tuberculosis and/or tuberculous meningitis depending on the trimester that the disease is diagnosed, or is the incidence of these complications the same regardless of pregnancy?
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ANSWER.—1. An accurate statistical answer is not available. In general, diagnosis in early pregnancy is desirable because it allows time for the institution of collapse therapy procedures. In late pregnancy it is often difficult to start such procedures and they are frequently deferred until delivery has taken place.

2. The entire question of the effect of pregnancy on tuberculosis is controversial, and widely divergent views have been expressed. It is generally held that patients do well during the period of pregnancy, but many show evidence of rapidly progressive disease during the postpartum months. The failure of these patients is held by some to be caused by a specific influence of pregnancy on tuberculosis; by some it is believed to be a mechanical effect due to the decompression of the chest at deliv-

cry, and a minority of observers deny that the course of the tuberculosis is influenced in any way by the pregnancy. Many studies of this problem have been attempted; the majority of clinicians conclude that pregnancy has a deleterious effect on tuberculosis; a few have the opposite opinion. Meningitis and miliary tuberculosis seem to occur more frequently among pregnant women, but no information is available indicating a greater tendency to occur in any particular trimester.

In contrast to the difficulty in analyzing resistance in tuberculosis, allergy can be measured easily. Quantitative tests (Lichtenstein, M. R.: Tuberculin Reaction in Tuberculosis During Pregnancy, *Am. Rev. Tuberc.* **46**:88, 1942) have demonstrated that allergy diminishes during the third trimester among tuberculous patients and returns to its former level soon after delivery.

## MYELOID DEPRESSION FROM COPPER

*To the Editor:*—Information is requested concerning myeloid depression following exposure to "corona 50 per cent plus" copper carbonate. A 57 year old farmer in excellent health used this product, mixing it with the wheat in a truck bed. In addition wind blew dust from the drill to the driver. The patient experienced a headache, hacking cough and a metallic taste in mouth, and later increasing weakness, substernal oppression on exertion and generalized purpura. Physical examination revealed no abnormality except for marked pallor. The red blood cell count was 1,940,000, the hemoglobin 6.4 Gm. per hundred cubic centimeters, white blood cell count 3,650, coagulation time 4 minutes, bleeding time 20 minutes; sedimentation rate 16 and clot retraction time 2½ hours. Since admission four days ago, with daily transfusions, the red blood cell count has risen to about 3,500,000 with the white blood cells remaining below 3,000. Sternal puncture revealed only mature red blood cells with occasional lymphocytes. The purpura has cleared up, bleeding time has returned to normal and a septic fever has developed. Is copper carbonate a known cause of primary refractory anemia?

E. T. Cook, M.D., Anadarko, Okla.

[This inquiry was referred to two authorities, whose respective replies follow.—Editor.]

Answer.—Copper carbonate has never been reported as a cause of primary refractive anemia in man, nor is there any evidence from experimental work that copper in any form produces anemia. The only important evidence of disease in human beings resulting from exposure to copper salts is the allegation that it may be responsible for certain cases of hemochromatosis. This claim has never been generally accepted.

Answer.—Such heavy metals as arsenic, gold, bismuth and mercury are known to produce a refractory anemia. Reports could not be found of such an anemia following the administration of copper. Toxic doses of copper produce hemolytic anemia in animals (*Am. J. Path.* **7**:351, 1931). Brodsky (*Arch. f. Gewerbepath. u. Gewerbehyg.* **5**:91, 1933) observed a variety of toxic symptoms in workers inhaling copper carbonate dust during the mixing with grain. The symptoms included fever, disagreeable taste in the mouth, nose bleeds, headache, cough, dyspnea and vomiting. No mention is made of changes in the blood picture. These persons recovered from the intoxication within a few days.

## EXPANDED TONSILLECTOMY

*To the Editor:*—What is present opinion concerning the desirability of an "expanded" tonsillectomy (Myersberg) as compared with the "usual type" in an average child in whom tonsillectomy is indicated? What are the advantages and dangers of each? What is the approximate frequency of use of each?

M.D., New York.

Answer.—A well conducted tonsillectomy of the "usual type," which includes the separate removal of the tissue of a well developed plica triangularis and any fairly well developed lymphoid structures lying between the tonsil and the lateral aspects of the base of the tongue, will accomplish all that may reasonably be expected of this operation.

From written descriptions of the so-called expanded operation, there is no reason to believe that it is not equally effective if one wishes to learn the technic and acquire the armamentarium.

The advantages or dangers of one over the other do not appear sufficient to warrant a prejudiced attitude for carrying out one technic to the exclusion of the other.

It is practically impossible to state in accurate figures how many of the "expanded" tonsillectomies are being done. However, the number of the "usual type" must be vastly greater. The "expanded" type of operation in large parts of the country is practically unknown.

Examination of a number of relevant textbooks, all published in recent years, fails except in one instance to show a discussion of this "expanded" method. The exception is the work edited by Jackson and Coates, published in 1929.

## SIALORRHEA

*To the Editor:*—What is the effective treatment for persistent sialorrhea? The patient is 70 years old and has arteriosclerotic heart disease for which he receives digitalis daily. He has had bronchial asthma for thirty years and has had sialorrhea for the past five years. Sputum varies in consistency from watery to thick mucous.

M.D., New York.

Answer.—Treatment of sialorrhea is aimed at the cause, and success depends on whether the cause can be found and a response is possible. There are many causes for salivation. Drugs, stomatitis, dental difficulties, vitamin B deficiencies, reflexes from the intestinal tract and other organs, psychic causes and organic disease of the central nervous system are among the most common ones. The patient's age and sex, the duration and persistence of the condition and the absence of notable digestive disorders would exclude a number of possibilities.

It is possible that the best diagnostic chance, based on the history, is that the chronic parasympatheticotonic (asthmatic) condition, in an arteriosclerotic man who could have a basal gangliar degeneration, has resulted in the sialosis. Stomatitis, smoking and avitaminosis could be contributing factors.

Atropine is the only drug of use, but its value may be limited by side effects. One could try it cautiously, giving 1/240 grain (about 0.25 mg.) after breakfast and lunch, doubling the dose if indicated, but being alert for toxicity. It probably would not be contraindicated by the cardiac condition and might help the asthma. The mouth should be cleaned up, and a vitamine B complex concentrate empirically given for several weeks. Irradiation of the salivary glands is known to decrease the flow, but often produces a dry mouth.

## EXPOSURE TO OILS

*To the Editor:*—For a considerable part of their working day, attendants at auto service stations and even more so men who clean out oil tankers inhale finely atomized petroleum oils. In view of the general warning against oily nose and throat sprays, are these men more afflicted with pulmonary disease such as tuberculosis, cancer and interstitial pneumonia than the general average? They never use respirators.

Bernhard A. Fedde, M.D., Brooklyn.

Answer.—In addition to the occupations mentioned, many others involve continuous exposure to oils. In a limited number the sole employment centers about the spraying of metal parts with oils. At times the local atmosphere is laden with oily mists. Nevertheless, with the exception of dermatitis, the incidence of occupational diseases is low. In the case of dermatitis the offending agent is more likely to be some additive such as sulfur or chlorine. The well known "oil furunculosis" usually derives from no precise irritant but from inadequate skin cleanliness. Even in the absence of suitable inquiry it may be recognized that while the total number of scrotal and penile cancers may be low, the incidence is higher among the oil using trades of the United States. Pulmonary cancers from oils are so rare that a single case attracts attention. In other countries and notably the British Isles, cancer from oils is of more frequent occurrence. The "spinning jenny" cancers of the textile trades in the British Isles constitute a common occupational disease. This difference is attributed to the source of the oils. The Scottish shale oils are high in cancerigenic agents, as are some Balkan and Asiatic crudes. In the United States, the several oil fields differ as to base nature, but none is rich in cancerigens, although not wholly lacking in some. In part, the apparent rarity of pulmonary cancer among oil workers may be due to lack of suitable investigation. In any circumstance, increased numbers may shortly be expected, since it is only a question of time until shale oils and fuels will be produced in this country together with increased dependence on oil imports with their higher cancerigenic content. All such items are ably presented by Hueper in his "Occupational Tumors" (Springfield, Ill., Charles C Thomas, Publisher, 1942).

## ANEMIA IN X-RAY DEPARTMENT PERSONNEL

*To the Editor:*—I look after the health of a hospital staff. Some persons working in the x-ray department have anemia, normocytic and normochromic in type. What preventive measures should be taken, and what treatment do you suggest?

M.D., Canada.

Answer.—This is evidently a group of persons who have anemia, but whose red blood cells are normal in size and the color index is 1. If the normocytic, normochromic anemia was the result of exposure to roentgen rays it would be an advanced symptom (tendency to hypoplastic or aplastic anemia or "refractory anemia") and would be associated with a decrease in the number of white blood cells and platelets. If these are not decreased in number, it may be associated with nephropathy or there may be a hemolytic factor. Normocytic anemias are sometimes noted in certain endocrine deficiencies, but it is not probable that a group of persons would be affected at the same time. Chronic infections are more frequently associated with a hemoglobin deficiency type of anemia (hypochromic). If a vacation of four weeks, away from the x-ray department, is not followed by improvement, the susceptible persons ought to avoid the possibility of damage to the blood-forming organs by further exposure to roentgen rays. Presumably there is no iron or liver extract deficiency, so that theoretically there would be no indication for these medicines. If a dilution factor could be demonstrated in the blood, a higher intake of protein could be tried.

References:

Bomford, R. R., and Rhoads, C. P.: Refractory Anaemia, Quart. Jour. Med. **10**: 175 (July) 1941.

Daughaday, W. H.; Williams, R. H., and Daland, G. A.: The Effect of Endocrinopathies on the Blood, Blood **3**: 1342 (Dec.) 1948.

Wintrobe, M. M.: Clinical Hematology, Philadelphia, Lea and Febiger, 1946, chapter 10, p. 431.

## MYELOGENOUS LEUKEMIA

*To the Editor:*—A Puerto Rican male, 43 years old, complained of abdominal discomfort. His history was noncontributory and tropical diseases were denied. Examination showed the spleen extending almost to the navel. Other clinical findings were normal. The blood cell count revealed 12.5 Gm. hemoglobin per hundred cubic centimeters, 4,940,000 erythrocytes and 2,800 leukocytes, with 54 per cent segmented cells, 38 per cent lymphocytes, 4 per cent band cells, 1 per cent metamyelocytes and 3 per cent eosinophils; there was moderate anisocytosis and poikilocytosis. Malarial parasites were not seen on smear. The urine was amber, cloudy and acid in reaction; there was insufficient quantity to observe specific gravity; tests for sugar and albumin were negative in result; many mucus threads and occasional epithelium were observed on microscopic examination. The Wassermann reaction was negative. A sternal puncture was performed, and the pathologist reported that the finding was compatible with myelogenous leukemia. Diagnosis was subleukemic leukemia. The general condition of the patient was not bad; he is weak, has lost weight and is unable to do manual work. Is splenectomy indicated, or should I continue with arsenic and vitamins? Is a different treatment indicated?

Stephen F. Saxl, M.D., New York.

Answer.—The answer to this question depends, in part, on the accuracy of the pathologist's conclusion that the findings were compatible with those of myelogenous leukemia. That, certainly, is a plausible diagnosis as judged by the limited information given. If this is the correct diagnosis, splenectomy is not indicated. Such an operation is not likely to do good and carries a substantial risk operatively and postoperatively.

Assuming that the diagnosis is myelogenous leukemia in a subleukemic stage, urethane, roentgen irradiation or even nitrogen mustard may be considered as well as arsenic, in selecting a therapeutic agent. However, if the patient does not have complaints at this time, nothing need be done. If the abdominal tumor becomes troublesome of itself, local irradiation may be helpful. Vitamins are not indicated. In fact, there is some evidence that folic acid may actually aggravate leukemia.

## DIETHYLSTILBESTROL IN ENDOMETRIOSIS

*To the Editor:*—What is the dose of diethylstilbestrol that will suppress menstruation in a case of suspected endometriosis? Is such a trial advisable?

M.D., Massachusetts.

Answer.—The dose of diethylstilbestrol which will suppress menstruation (with or without endometriosis) varies with the patient. The bigger the dose the better and the quicker it suppresses the period, but, unfortunately, in many women nausea and vomiting prevent the larger dosage. Giving diethylstilbestrol just as the patient goes to bed prevents some of the nausea. One can start with a 5 mg. dose and increase it each night by one tablet (5 mg.) until 25 mg. a day is being taken, stopping when nausea becomes severe, or one can start with 25 mg. each night, reducing it 5 mg. each night if nausea supervenes. The latter method seems to work faster.

The second question can only be answered by saying that we do not know whether it will suppress endometriosis or whether it is advisable. We do know that the small doses produced by the normally menstruating ovary make endometriosis worse or cause it to progress. Whether the stimulating effect of large doses of estrogen on the endometrial-like tissue is greater than the ovulation-suppressing effect of the large doses is not at present fully known.

## ETIOLOGY OF URINARY CALCULI

*To the Editor:*—A 30 year old white man was stationed with the Air Force in Accra, British West Africa, during the war. Since returning home he has had four severe attacks of renal colic. Each time a stone was passed, an analysis of one of the stones showed it to be a calcium compound. He has been on a low calcium diet, which was recommended by a urologist, but has continued to form stones. The patient tells me that renal stone formation amongst the native population of Accra is common, many dying from complications. The patient's past history and his family history are noncontributory. Is it possible that ingestion of the water of Accra (the source of trouble in the natives) has influenced the chemical process of the body so that he will continue to form stones? Have similar cases been reported?

M.D., Massachusetts

Answer.—The etiology of urinary calculi is complex and includes factors of infection, stasis or obstruction, deficiency diets, excessive excretion of calcium due to various causes for mobilization of calcium from the bones or, more rarely, to excessive oral intake. In addition there are probably constitutional predisposing factors in some instances. The high incidence of renal stone formation among natives in India, Africa and other poverty stricken areas is undoubtedly related to severe dietary deficiency. In hot climates where the water supply is poor, stones may develop within weeks or months if the subject neglects to maintain a sufficiently large fluid intake. This was demonstrated in Army experiences during the recent war. If, in such circumstances, immobilization occurs as a result of illness, or if the ration contains considerable calcium, precipitation in the urinary tract can easily occur. The ingestion of the local water would be an aggravating factor only if it happened to contain a large amount of calcium. This influence would cease, however, with departure from the particular region.

The continued formation of urinary calculi in a patient must therefore be ascribed to one or more of the other factors listed. It is assumed that a careful study of the urinary tract has been made to exclude stasis and infection. Dietary treatment is not successful although, if the stone consists of calcium oxalate, foods containing large amounts of oxalate such as chocolate, beets, spinach, rhubarb and Swiss chard should be eliminated from the diet. Intake of milk and cheese should also be restricted. The most important item, however, is the large fluid intake, enough to produce at least 3 liters of urine daily. Hyperparathyroidism should be excluded by appropriate tests.

Reference:

Pierce, L. W., and Bloom, B.: J. Urol. **54**: 466, 1945.

## GALACTORRHEA

*To the Editor:*—A 30 year old white married woman has 1 child, aged 2½. In November 1948 the patient noticed the sudden onset of bilateral lactation without apparent cause. She feels fine otherwise. She is not pregnant and her menstrual periods are completely normal. Pelvic examination was negative. Examination of the breasts by palpation and transillumination did not reveal abnormality. There has been little or no manipulatory stimulation of the breasts. The patient is completely feminine in appearance without outward signs of glandular dysfunction. In October 1948, one month prior to the onset of the lactation, the patient had an attack of herpes zoster involving the five lower intercostal spaces and ribs as well as the back on the right side. The skin lesions have disappeared, although some burning and pruritus remain over the involved area. Since the abnormal lactation began, she has received the following medication without apparent effect: (1) testosterone, 5 mg. daily for seven weeks; (2) diethylstilbesrol, 10 mg. daily for four weeks; (3) diethylstilbestrol and testosterone, 5 mg. daily of each for four weeks. These medicaments were administered for approximately twenty-three days of each menstrual cycle and were omitted during the period itself. Despite the treatment, lactation has continued without interruption and recently has been increasing in quantity. The breasts are painful and the apparently normal milk is expressed with the slightest pressure. There have not been other signs of abnormal secretion. 1. What are the causes for this condition? 2. Are any further laboratory measures indicated? 3. What therapeutic measures might terminate the secretion? 4. Is there any known relationship between shingles and "idiopathic lactation"?

David L. Cronin, M.D., Reseda, Calif.

Answer.—1. This condition called galactorrhea may be due to a variety of conditions including atrophy of the uterus and ovaries, neoplasms of the pituitary gland or midbrain structures, rare diseases of the brain and shock to the nervous system. The mechanism involved in galactorrhea is not understood. 2. There are no specific laboratory tests to be performed, but every effort must be made to be sure there is no pituitary or other brain disturbance, neoplastic or otherwise. 3. Treatment is unsatisfactory. However, it is recommended that 10 mg. diethylstilbestrol be continued daily for at least three months, and if necessary even up to six months. Roentgen therapy applied directly to the breasts may suppress the secretion of milk but is not advisable in a woman only 30 years of age.

Likewise, radiation treatment to the pituitary gland may stop the flow of milk, but this treatment also may not be harmless; hence, more time should be permitted to elapse to see what further estrogen treatment will do. 4. There is no apparent connection between herpes zoster and galactorrhea.

## PULMONARY EMBOLISM IN HEMIPLEGIA

*To the Editor:*—A 19 year old sailor was observed to have subacute bacterial or acute bacterial endocarditis, embolic phenomena, fever, enlarged spleen and roughened mitral murmur in systole. Six cultures were negative and therapy was withheld for three days. Treatment with progressively increasing doses of penicillin was instituted, up to 10,000,000 units daily, before fever was controlled in the face of increasing symptoms. On the eighth day of therapy, which consisted of intravenous drip during the day and intramuscular drip during the night, gradually occurring hemiplegia of the right forearm and hand developed, and he remained in near coma for five days. He regained full mental capacity and clear speech after two weeks. Passive movements and massage on the paralyzed leg were begun within three days after the cerebral accident. Repeated circulation times were normal. What appeared to be three pulmonary emboli developed. The first was not recognized, but the two later ones two days afterward at about two hour intervals were characterized by dyspnea, substernal pain, a sense of impending disaster and confusion and perspiration. Penicillin was increased to 20,000,000 units by continuous intravenous route, and administration of heparin was begun immediately, with an eventual change to dicumarol.® The patient is alive and afebrile after three months. 1. How frequent are pulmonary emboli in cases of hemiplegia in young subjects with previously normal veins? 2. Is venous insufficiency any more frequent when ligation is performed in the presence of paralysis and sensory loss in the leg? 3. In view of the frequent reports of cerebral hemorrhage occurring in patients treated with anticoagulants was a venous ligation to be preferred after the initial attack had subsided?

F. E. Wetzel, M.D., San Francisco.

Answer.—Pulmonary embolism has occurred rarely in patients who have had hemiplegia irrespective of their age. The venous system probably would not become insufficient after ligation in the presence of paralysis and sensory loss in the leg. The collateral circulation is so good in young persons that the effect of it on the normal venous circulation would hardly be detectable, providing the interruption was distal to the profunda femoris vein or to the saphenofemoral junction. In any patient who has had a pulmonary embolism that is nonlethal, the best method of treatment, providing a competent vascular surgeon is available, is to interrupt the femoral veins in both groins. These interruptions should be just distal to the saphenous vein; if a thrombus is found in the femoral vein, a thrombectomy may be done at the same time. In summary, the safest method of treatment in competent hands for your patient probably would have been interruption of both femoral veins. Further experience with the anticoagulants is still necessary to determine whether this method of therapy is as satisfactory as interruption of the femoral vein in the presence of recognizable venous thrombosis and pulmonary embolism.

## EXPOSURE TO CHLORINE AND HEART DISEASE

*To the Editor:*—A 41 year old white man has complained of shortness of breath and nonproductive cough for one year. He states that he was in good health until exposed to an unusually heavy concentration of chlorine gas while at work. Immediately after this exposure he was hospitalized four days with acute respiratory symptoms. He has had profuse night sweats for several months and reports a weight loss of 24 pounds (10.9 Kg.) in one year. He has previously been digitalized and has received weekly injections of a mercurial diuretic. On examination, the man appeared acutely ill with moist rales scattered through both lung bases. The heart was grossly enlarged with a definite apical thrust both visible and palpable in the midaxillary line. Significant murmurs or thrills were absent. The blood pressure was 166 systolic and 116 diastolic. Strong femoral pulsations were felt bilaterally. The liver was not enlarged and there was no dependent edema in the ankles. Films and fluoroscopy of the chest showed a typical water bottle shape, increased in all diameters. Evidence of pulmonary tuberculosis was lacking. Blood count showed moderate hypochromic anemia with a total white cell count of 12,700 with 85 per cent polymorphonuclear cells and 15 per cent lymphocytes. Urinalysis revealed a trace of albumin and a few hyalin and finely granular casts. The sputum contained blood, but smears and cultures were negative for tubercle bacilli. A blood culture was negative. While the roentgen observations are suggestive of pericardial effusion, the blood pressure and loudness of the heart sounds on auscultation and the prominence of the apex beat tend to support the probability of a severe hypertensive cardiac disease with cardiac dilatation. Are any reports available indicating that cardiac dilatation and chronic failure may result either in a normal or previously damaged heart from exposure to chlorine?

Donald N. Fowell, M.D., Stockton, Calif.

Answer.—The problem of a possible relationship of exposure to chlorine gas with respiratory symptoms and cardiac failure is difficult to evaluate in this case. The presence of hypertension and enlargement of the heart to the left and right suggest that cardiac failure might be on the basis of hypertension alone. However, the development of cor pulmonale secondary to pulmonary fibrosis resulting from chlorine inhalation cannot be excluded with the data presented. The electrocardiogram and pulmonary physiologic studies, if compensation could be effected, would be helpful. A survey of recent literature fails to reveal documented cases of heart failure secondary to the inhalation of noxious gases. Acute pulmonary edema is not unusual and responds to positive pressure administration of oxygen. However, Winternitz and his co-workers have produced pulmonary fibrosis in experimental animals following inhalation of irritating substances.

## TREATMENT OF TRIGEMINAL NEURALGIA

*To the Editor:*—During the past year I have treated successfully 3 cases of trigeminal neuralgia with repeated injections of vitamin B complex. Since all the books still consider it a purely surgical problem I would greatly appreciate your comment.

Edmund Fremont, M.D., Manito, Ill.

Answer.—This is an old story. Trigeminal neuralgia can be temporarily successfully treated with any form of therapy as it is a characteristic of the disease that it subsides spontaneously. When it is the first attack of the disease which is so treated the results are apt to be particularly gratifying, as the freedom from further difficulty, after the first attack has subsided, often persists for two or three years regardless of the type of treatment. However, when the pain returns the treatment which originally proved so successful, whether it be vitamin B complex or some other type of medical therapy, practically never succeeds again. Only injection of the nerve with alcohol, section of one of the peripheral divisions or of the sensory root back of the gasserian ganglion can be relied on to relieve the pain of this disease with certainty, but only section of the root back of the ganglion will give permanent relief. The use of vitamin B in the treatment of trigeminal neuralgia has often been recommended, and there are numerous publications dealing with this form of treatment. It is unfortunate that it is not effective.

## HIGH INTENSITY SOUND WAVES IN AVIATION

*To the Editor:*—Pilots have inquired of me of the possible effect of "high frequency" and "high intensity" sounds and vibrations on the production of fatigue. I quote from a pilot's letter: "It is felt that the sounds and vibrations we are worrying about are those not heard by the human ear, and possibly the vibrations are so high in frequency that they are not felt by the human body. For example, there is a dog call whistle which cannot be heard by human beings, but will attract the attention of a dog at a considerable distance. We believe that such sounds and vibrations come from propellors or slipstream hitting along various windshield corners or other irregularities on the fuselage or other parts of high speed aircraft." I am unable to find any information on "sounds unheard" and "vibrations not felt" by the human body.

Herbert F. Fenwick, M.D., Chicago.

Answer.—Clinical or experimental evidence to indicate that sound waves above the frequency range audible to the human ear can produce auditory fatigue or acoustic trauma has not been reported. Extremely high intensities of these so-called supersonic sound waves at close range can cause tissue destruction by the production of heat. However, the intensity of sound generated around the moving parts of an airplane would be much below this intensity level.

It is a safe rule that "what the ear cannot hear will not harm it."

## TOXICITY OF PIPE-SEALING COMPOUNDS

*To the Editor:*—Does Leadite,® manufactured in Philadelphia, contain toxic material that would produce anemia and nephritis?

Fred Pulgram, M.D., Trenton, Ill.

Answer.—This product, manufactured by the Leadite Company, Inc., Girard Trust Company Building, Philadelphia, is believed to represent a pipe joint sealer. Since there are scores of compounds of this nature, the reply made is general rather than specific. Ordinarily, these substances fall into two groups; those that contain lead and those that do not. Frequently, the non-lead-bearing agents are promoted as containing no poisonous substances and represent various mixtures of Portland cement, flour, tar, talc and lampblack. The leaded types are usually made in paste form and involve mixtures of divers lead compounds in oils and glycerin. Theoretically, any and all of these compounds are applied only on the exterior of joint surfaces for sealing purposes, but some is likely to come in contact with the interior of pipes at the joint areas. This exposure might be the source of lead poisoning, particularly in large new housing projects where all piping is new. Actual tests as carried out by the Detroit Department of Health reveal no significant lead content in water. Such lead as appears shows up as "slugs" of such size as likely to attract attention and is discarded. The remote possibility remains that lead poisoning may arise from this source from the intake of a few small "slugs" of this leaded paste. The manufacture of these preparations, starting with dusty lead compounds, may constitute an industrial exposure. Considerable lead intake from any of these pipe joint compounds would cause lead poisoning. Anemia and nephritis might then arise, along with other indications of plumbism.

## TREATMENT FOR ENLARGED THYMUS

*To the Editor:*—A 10 month old male infant is in excellent condition except for an enlarged thymus gland. The first roentgenogram showed a borderline case of enlargement; two others, and roentgenograms taken since that time, also show it to be enlarged. He has had five roentgen treatments and now the roentgenologist suggests high voltage roentgen therapy or surgical removal. What do you consider the best treatment for this patient? Are there dangers in roentgen therapy? M.D., Pennsylvania.

ANSWER.—A 10 month old male infant in excellent physical condition might be expected to have a relatively large thymus gland. The only evidence of its enlargement, according to the query, was in two roentgen examinations. Most authors question the validity of an anterior-posterior roentgen measurement as being diagnostic of an enlarged thymus gland. Other causes for a widened supracardiac shadow in the roentgenograms are tracheobronchial lymphadenitis, mediastinal pleurisy, paravertebral abscess, mediastinal neoplasms, pulmonary atelectasis and consolidation.

Other authors disregard the transverse shadow and have attempted to demonstrate by lateral technic a thickened thymus gland which might encroach on the trachea. In a series of careful studies by this method over 50 per cent of normal infants seem to show a narrowing of the tracheal lumen.

As the thymus gland is composed of lymphatic tissue, rather sensitive to roentgen irradiation, it would seem that the five roentgen treatments should be more than adequate, particularly in view of the fact that the infant is entirely asymptomatic, and the only criteria for enlarged thymus in his case are the roentgen examinations. High voltage roentgen therapy might be dangerous, as there are other organs more vital to life in the region of the anterior mediastinum than the thymus gland. As a general rule, it may be stated that heavy roentgen dose is contraindicated and it would be much better to undertreat than overtreat with roentgen therapy.

There is absolutely no indication for surgical removal in a physically normal child who has shown no symptoms.

## DINITROPHENOL AND FORMATION OF CATARACTS

*To the Editor:*—I am much interested in the actions of dinitrophenol and its relation to the formation of cataracts. Has anyone been able to say definitely what toxic condition has been responsible for producing cataracts and what degenerative changes may occur as a result, not only in the lens of the eye but in the body? J. O. Chiapello, M.D., Chico, Calif.

ANSWER.—Dinitrophenol increases cellular metabolism primarily at the expense of fats and carbohydrates. A large number of clinical and experimental studies have not indicated the cause of the cataract formation. Horner (Dinitrophenol and Its Relation to Formation of Cataract, *Arch. Ophth.* **27**:1097, 1942) found only 0.86 per cent of all persons who ingested dinitrophenol afflicted with cataract. No correlation to the amount of drug taken, or to the length of time during which it was taken, or to the age of the patient could be established. Females may be more susceptible than males, and there is apparently a genetic susceptibility to cataract formation due to the drug. The usual laboratory animals are immune, but in baby chicks and baby ducks acute reversible lens opacities develop within a few hours after administration. The only characteristic lesions caused by the compound are bilateral progressive cataracts. Dermatitis, agranulocytosis, peripheral neuritis and hepatic, renal and cardiac damage have been described.

Buschke (Acute Reversible Cataract in Chickens Due to Various Nitro Compounds, *Am. J. Ophth.* **30**:1356, 1947) found a close correlation between cataract-producing properties of nitro compounds and ability to raise the basal metabolism of the animal. He postulated that a disturbance of the phosphorylative mechanism of the lens might cause dissipation of energy necessary to specific tissue functions and might result in cataract formation.

## SWEET TASTE SENSATION

*To the Editor:*—A middle-aged man is complaining of a strong, sweet taste in the mouth which at times becomes unbearable. He has had it constantly for three months. History and physical examination are negative. Please advise. H. J. Konstam, M.D., New York.

ANSWER.—The complaint of a constant, strong, sweet taste by a middle-aged man who does not show abnormal conditions may be due to the actual presence of a sweet-tasting material, to a neurogenic cause or to a psychoneurotic aberration. A sweet taste may arise from infection in the respiratory tract or mouth, or from a denture or wash, but it is unlikely that it would be as intense as described, and the taste from such causes is more commonly sour, bitter or foul. It is also improbable that it could be caused by a nerve lesion, and a central lesion in the temperosphenoid lobe usually produces fleeting hallucinations.

If a local cause can be excluded by a reexamination, the patient should be examined by a neuropsychiatrist. Hysteria, although usually showing multiple symptoms and obviously based on a suggestive background, can produce a constant, intense taste perversion—a conversion symptom based on a suppressed wish. A history of some change or stress or illness at the time of onset might be significant.

## EFFECT OF ROENTGEN TREATMENT ON BRAIN TISSUE

*To the Editor:*—Is anything known about the effect of intensive roentgen treatment on normal brain tissue? M.D., Pennsylvania.

ANSWER.—Nervous tissue, both of the central nervous system and the peripheral nerves, is notoriously resistant to the effects of irradiation. However, in those instances in which enormous doses of radiation have been given or in which moderate treatment has been repeated at intervals so that there is a large cumulative total dose, fibrosis (gliosis) has been noted and subsequent gross atrophy and shrinkage of the irradiated brain observed. With the ordinary large dose treatments not repeated too often, one can say that normal brain tissue is unaffected.

## ELECTROGALVANIC CURRENTS FROM DENTAL FILLINGS

*To the Editor:*—How can one determine and rule out burning sensation of the tongue due to electrogalvanic currents in the mouth as a result of metal fillings? William L. Dobes, M.D., Atlanta, Ga.

ANSWER.—One can determine the importance of electrogalvanic currents from fillings of different potential by indirect and direct means. 1. Be sure that another cause for the glossopyrosis is not present, such as glossitis, a deficiency (notably B complex), the use of an irritant (tobacco, a mouth wash, food or drink), an estrogenic deficiency, a deficiency of saliva, cancerophobia, a neurogenic or psychogenic source. 2. Burning from an electrical source is not common, and it occurs soon after dental repair. The sequence is usually obvious. 3. Removal of the guilty filling or denture and replacement by a temporary nonmetal filling is a direct therapeutic test which should be done only if indicated by the findings of numbers 1 and 2.

Some oral specialists feel that all forms of glossitis should be given therapy with a vitamin B complex concentrate. This is probably legitimate only when another specific cause cannot be found.

## TUBERCULIN REACTION AND ANTIHISTAMINICS

*To the Editor:*—What is the effect of antihistaminic drugs on the tuberculin skin reaction? Is it possible for a person with a positive reaction to tuberculin to obtain a negative skin reaction to tuberculin or to purified protein derivative of tuberculin by taking antihistaminic drugs prior to and during tuberculin skin testing? References, if any, will be appreciated. M.D., New York.

ANSWER.—There is a difference in opinion on this subject. However, trustworthy reports indicate that antihistaminic drugs do not modify the intradermal reaction or other manifestations of tuberculin allergy. The Koch phenomenon and tuberculin shock in tuberculous guinea pigs apparently persist in spite of previous injection of histamine. Articles on this subject which may be consulted are: Boquet, A.: *Annales de l'Institut Pasteur,* **69**:55, 1943, and Kreis, B.: *ibid.* **72**:308, 1946. Unpublished experiments in which tuberculous guinea pigs were given large injections of antihistamine and then tested with tuberculin indicate that significant modification of the tuberculin skin reaction did not result from the antihistamine injection.

## GALACTOSE TOLERANCE

*To the Editor:—Is galactose used in sugar tolerance tests? Is it in any way superior to the use of dextrose?*

Frederick Falkson, M.D., Walden, N. Y.

ANSWER.—The usual "sugar tolerance test" employs dextrose. It has clinical value in diabetes mellitus, renal glycosuria and in certain other conditions. Perhaps what is meant is the galactose tolerance test, or Bauer's test, which indicates the carbohydrate tolerance of the liver. This latter test is not very reliable, but if carried out properly it may be of value in the differential diagnosis of hepatic dysfunction. Galactose, like dextrose, is a simple sugar which is available in pure form. It is assimilated and converted into glycogen by the liver. It differs from dextrose, however, in that the rest of the body seems unable to store galactose and it is not a "renal threshold substance." Any good textbook on laboratory methods in clinical diagnosis discusses both of these tests.

## DEATH IN TERTIAN MALARIA

*To the Editor:—A 25 year old white veteran had severe chills, high grade fever and malaise of two days' duration. A blood film showed ring forms of the tertian malarial parasite. Quinacrine hydrochloride was prescribed in 0.1 Gm. doses; after he had taken four tablets he became disoriented and shortly after lapsed into a deep coma and became incontinent of stool and urine. The patient was hospitalized and died two hours after arrival. Just prior to death the temperature was 104 F. (rectally), and a diffuse macular rash and a few petechial areas appeared on the abdomen. Necropsy was not performed. Could this have been a case of cerebral malaria? The blood film showed tertian parasites only. Was this a case of adrenal disease of the Waterhouse-Friderichsen type?*

N. W. Nemiroff, M.D., Oradell, N. J.

ANSWER.—As a rule cerebral malaria does not occur with vivax (tertian) malaria. It is possible to have convulsions in recurrent malaria of the vivax type, with hyperthermia. It would be doubtful if the rapid death occurred as the result of the quinacrine, which probably had been taken on many previous occasions without similar effects. It would seem doubtful that this is a case of adrenal gland disease of the Waterhouse-Friderichsen type from the available evidence.

## INTRAVENOUS THIAMINE AND PYRIDOXINE

*To the Editor:—What is the maximum dose of thiamine hydrochloride and pyridoxine permitted intravenously to a female patient suffering from toxemia caused by pregnancy? A colleague has suggested 200 mg. of each at the same time. I feel that this amount would endanger the liver of the patient.*

Fred F. Prausnitz, M.D., Larchmont, N. Y.

ANSWER.—Thiamine hydrochloride can be toxic and probably not more than 50 mg. should be given intravenously. In one case 100 mg. produced complete collapse. Some authorities say that only 1 to 2 mg. is utilized daily; if this is true, large doses are unnecessary. The oral route seems to be as good as any other unless vomiting prevents it. As for pyridoxine, much less is known about it and the dosage has not been completely established.

The many preparations of vitamin B in which the various elements are given in their known amounts according to present day knowledge are much better to use orally. If the patient is vomiting, they can be given intramuscularly.

The value of using large amounts of thiamine or pyridoxine in toxemia of pregnancy has not been proved.

## TUBERCULIN SKIN TEST

*To the Editor:—How long after onset of infection does it take a patient with skin tuberculosis to acquire sensitivity (allergy) so that it can be detected by the usual tuberculin skin tests?*

Edward S. King, M.D., Winston-Salem, N. C.

ANSWER.—The most reliable data come from the vast experience of the last few years with intracutaneous injection of BCG vaccine. Since the organism used in this vaccine is a live bacillus and inoculation sets up a true, even though abortive infection, data from vaccination experiments would seem to answer the question most satisfactorily. Experience has shown that after administration of 0.1 mg. BCG vaccine, the tuberculin skin reaction becomes positive during the third week. Tests at the end of three weeks generally elicit positive reactions to 0.1 mg. old tuberculin, although the reaction is ordinarily not a strong one. Probably the results of this controlled observation in vaccinated persons can be applied in estimating the time of development of skin allergy after accidental skin infection with tubercle bacilli in man.

## HUMAN FERTILIZATION BY ANIMALS

*To the Editor:—Is there any truth to stories that women can be bred and conceive by animals? Can men breed with female animals?*

M.D., Illinois.

ANSWER.—Mating of human beings with animals is physiologically impossible; hence, there is absolutely no basis for the stories that pregnancy can result from such matings. No one has even attempted to bring forth proof of such an occurrence.

## TREATMENT OF ARTERIOSCLEROSIS

*To the Editor:—What is the present status of the use of choline and inositol in the treatment of arteriosclerosis?*

Maurice Goleburn, M.D., Wilmington, Del.

ANSWER.—Dr. Lester Morrison of the College of Medical Evangelists has reported that choline appears to have a slight favorable effect on cholesterol-induced arteriosclerosis in rabbits. No report of the use of choline in human arteriosclerosis has been found in the recent medical literature. This is also true for inositol.

The evidence for the role of cholesterol in the production of human arteriosclerosis is equivocal and there is no evidence that the feeding of choline or inositol will alter significantly the blood cholesterol levels in normal or arteriosclerotic animals or human beings.

## CHILDREN'S SHOES

*To the Editor:—At what stage should an infant wear shoes? Is there any advantage in the high shoe as compared with the oxford at any stage of development? Is there any advantage to the type of shoe in which the sole continues up the back of the shoe (Jumping Jacks) in the normally developing foot?*

Milton Marcus, M.D., New York.

ANSWER.—1. Shoes need not be put on infant's feet until they stand and walk on hard surfaces. When children start to walk and the surfaces are soft (sandpiles, grass, play pen pads) they should be allowed to walk barefoot. This will permit normal development of the foot. 2. The infant's first walking shoe should be firm soled with a rigid counter and adequate support for the arches. Most observers believe that the first shoes should be high topped, to provide ankle support. After the child has learned to walk either high shoes or oxfords are acceptable. 3. The continuation of the sole up the back merely serves as a firm counter.

## OIL-ANESTHETIC MIXTURES

*To the Editor:—Is it safe to inject one of the oil-anesthetic mixtures into the pericoccygeal tissues for relief of coccydynia? Have any of the oil-anesthetic mixtures been used for paravertebral lumbar sympathetic blocks? Are there any authentic cases on record of oil embolism (pulmonary) following the use of anesthetic-in-oil mixtures?*

Paul Russell, M.D., Inglewood, Calif.

ANSWER.—Anesthetic-in-oil mixtures are used for the relief of chronic pain. These mixtures, for the most part, contain procaine and benzyl alcohol in a peanut oil base. They are most useful when pooled about a nerve trunk. The infiltration into tissues with this material, especially if the tissue is superficial, does not seem advisable because of the danger of sloughing. Anesthetic-oil mixtures have been used for paravertebral lumbar sympathetic blocks. It would be extremely unlikely for oil embolism to occur after use of these mixtures provided the proper technic of injection is followed. One must be sure to aspirate frequently to avoid intravascular injection.

## INSULIN IN INOPERABLE CANCER

*To the Editor:—I am treating a man with inoperable carcinoma of the descending colon, who is still able to continue his business most of the time. Because of loss of weight and vomiting in the presence of minimal pain, the question has come up whether insulin for malnutrition would conceivably stimulate the progress of the tumor. Is there a contraindication to giving insulin for undernourished persons with early duodenal ulcer?*

M.D., Virginia.

ANSWER.—The use of insulin to stimulate a gain in weight has had wide favor, and at times has seemed to be effective. Insulin is not known to stimulate the growth of cancer. Insulin in small doses (5 units) may be used to stimulate the appetite of undernourished patients who have duodenal ulcer. Use of doses large enough to produce hypoglycemia should be avoided because of the stimulating effect of hypoglycemia on gastric secretion.

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MORRIS FISHBEIN, M.D.

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Acta chirurgica Scandinavica. Stockholm.
Acta clinica belgica. Brussels.
Acta dermato-venereologica. Stockholm.
Acta haematologica. Basel.
Acta medica orientalia. Jerusalem
Acta medica scandinavica. Stockholm.
Acta ophthalmologica. Copenhagen.
Acta orthopaedica Scandinavica. Copenhagen.
Acta oto-laryngologica. Stockholm.
Acta paediatrica. Stockholm.
Acta radiologica. Stockholm.
American Heart Journal. St. Louis.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Fort Wayne, Ind.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Medicine. New York.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Chicago.
American Journal of Orthopsychiatry. New York.
American Journal of Pathology. Ann Arbor, Mich.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. and Radium Therapy. Springfield. Ill
American Journal of Surgery. New York.
American Journal of Syphilis, Gonor. and Venereal Diseases. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Practitioner. Philadelphia.
American Review of Tuberculosis. New York.
Anales de la Cátedra de patología y clínica de la tuberculosis. Buenos Aires.
Anesthesiology. New York.
Annales de l'Institut Pasteur. Paris.
Annales pædiatrici. Basel.
Annals of Allergy. Minneapolis.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Otology, Rhinology and Laryngology. St. Louis.
Annals of the Rheumatic Diseases. London.
Annals of Surgery. Philadelphia.
Annals of Tropical Medicine. Liverpool.
Annals of Western Medicine and Surgery. Los Angeles.
Archiv für experimentalle Pathologie und Pharmakologie. Heidelberg.
Archiv für Kinderheilkunde. Stuttgart.
Archiv für Psychiatrie und Nervenkrankheiten. Berlin.
Archives des maladies de l'appareil digestif. Paris.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives of Disease in Childhood. London.
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Archivos del Instituto de cardiología de México.
Archivos de pediatría del Uruguay. Montevideo.
Arizona Medicine. Phoenix.
Arquivos de neuro-psiquiatria. São Paulo.
Australian Journal of Experimental Biology and Medical Science. Adelaide.
Australian and New Zealand Journal of Surgery. Sydney.
Blood. New York.
Brain. London.
Brasil medico Rio de Janeiro.
British Heart Journal. London.
British Journal of Cancer. London.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Industrial Medicine. London.
British Journal of Ophthalmology. London.
British Journal of Plastic Surgery. Edinburgh.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Venereal Diseases. London.
British Medical Journal. London.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of the Los Angeles Neurological Society. Los Angeles.
Bulletin of the New York Academy of Medicine. New York.
California Medicine San Francisco
Canadian Journal of Research. Medical Sciences. Ottawa.
Canadian Medical Association Journal. Montreal.
Cancer. New York.
Cancer Research. Baltimore.
Cardiologia. Basel.
Chinese Medical Journal. Shanghai.
Chirug. Heidelberg.
Cincinnati Journal of Medicine. Cincinnati.
Connecticut State Medical Journal. Hartford.
Delaware State Medical Journal. Wilmington.
Deutsche medizinische Wochenschrift. Stuttgart.
Diseases of Chest. Chicago.
Edinburgh Medical Journal. Edinburgh.
Encéphale. Paris.
Endocrinology. Springfield, Ill.
Experimental Medicine and Surgery. Brooklyn.
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France médicale. Paris.
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Helvetica chirurgica acta. Basel.
Helvetica medica acta. Basel.
Illinois Medical Journal. Chicago.
Indian Medical Gazette. Calcutta.
Industrial Medicine. Chicago.
Irish Journal of Medical Science. Dublin.
Journal of Allergy. St. Louis.
Journal of the American Dental Association. Chicago.
Journal of the American Medical Women's Association. Nashville, Tenn.
Journal of the Arkansas Medical Society. Fort Smith.
Journal of Aviation Medicine. St. Paul.
Journal of Bacteriology. Baltimore.
Journal of Bone and Joint Surgery. Boston.
Journal of Clinical Endocrinology. Springfield, Ill.
Journal of Clinical Investigation. Cincinnati.
Journal of Experimental Medicine. New York.
Journal of the Florida Medical Association. Jacksonville.
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Journal of the Medical Association of Georgia. Atlanta.
Journal of the Medical Society of New Jersey. Trenton.
Journal de médecine de Lyon. Lyon.
Journal of Mental Science. London.
Journal of the Michigan State Medical Society. Lansing.
Journal of the Missouri State Medical Association. St. Louis.
Journal of the Mount Sinai Hospital. New York.
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Journal of Nervous and Mental Disease. New York.
Journal of Neurology, Neurosurgery and Psychiatry. London.
Journal of Neuropathology and Experimental Neurology. Baltimore.
Journal of Neurophysiology. Springfield, Ill.
Journal of Neurosurgery. Springfield, Ill.
Journal of Nutrition. Philadelphia.
Journal of Obstetrics and Gynaecology of the British Empire. Manchester.
Journal of the Oklahoma State Medical Association. Oklahoma City.
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Nebraska State Medical Journal. Lincoln.
Nederlandsch Tijdschrift voor Geneeskunde. Amsterdam.
New England Journal of Medicine. Boston.
New Orleans Medical and Surgical Journal. New Orleans.
New York State Journal of Medicine. New York.
*New Zealand Medical Journal. Wellington.*
Nordisk medicin. Stockholm.
North Carolina Medical Journal. Winston-Salem.
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Ohio State Medical Journal. Columbus.
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Presse médicale. Paris
Proceedings of Royal Society of Medicine. London.
*Proceedings of the Society for Experimental Biology and Medicine.* Utica, N. Y.
Proceedings of the Staff Meetings of the Mayo Clinic. Rochester, Minn.
Progrès médical. Paris.
Psychiatric Quarterly. Utica, N. Y.
Psychiatry. Washington, D. C.
Psychoanalytic Quarterly. Albany, N. Y.
Psychosomatic Medicine. New York.
Public Health Reports. Washington, D. C.
Puerto Rico Journal of Public Health and Tropical Medicine. San Juan.
Quarterly Bulletin of Sea View Hospital. Staten Island, N. Y.
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Semana médica. Buenos Aires.
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United States Naval Medical Bulletin. Washington, D. C.
Urologic and Cutaneous Review. West Palm Beach, Fla.
Virginia Medical Monthly. Richmond.
Western Journal of Surgery, Obstetrics and Gynecology. Portland, Ore.
West Virginia Medical Journal. Charleston.
*Wiener klinische Wochenschrift.* Vienna.
Wiener medizinische Wochenschrift. Vienna.
Wisconsin Medical Journal. Madison.
Yale Journal of Biology and Medicine. New Haven.

# SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "OS," Organization Section; "ab," abstracts; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Decker, Charles William, 550
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Deeter, Don Favorite, 970
*DeHond, Jannes G., 1287*
Dennis, Frank Lowndes, 1287
De Puy, Edward Spence, 830
Derby, Arthur Putnam, 1227
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Dice, Reuben J., 123
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Dolloff, Albert Simeon, 422
Dominick, John Jacob, 830
Donovan, Arthur Bland, 1227
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*Eiss, Daniel Webster, 905*
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Ely, William Lewis, 830
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*Epler, Crum, 239*
Ericson, John Gustaf, 1227
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*Evhans, Daniel Warren, 1227*

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Fraser, Homer Elmer, 341
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Frink, Frank Lee, 1228
Frost, John Henry, 640
Fuhlbrigge, Arthur Alfred, 341
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Garrison, Walter Sherman, 550
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Gasson, James Henry, 422
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Gaus, Louis Herbert, 422
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George, Shaul, 640
Gerhard, James Rieser, 550
Geyser, Frank Roebling, 830
Gichner, Joseph Enoch, 422
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*Giles, Upton Wright, 830*
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*Girard, Felix Eloi, 830*
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*Hansen, John, 1169*
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Porterfield, Clarence Virgil, 490
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*Acad.—Academy*
*Am.—American*
*A.—Association*
*Coll.—College*
*Commn.—Commission*
*Comm.—Committee*
*Conf.—Conference*
*Cong.—Congress*
*Dist.—District*
*Div.—Division*
*Found.—Foundation*
*Hosp.—Hospital*
*Indust.—Industrial*
*Inst.—Institute*
*Internat.—International*
*M.—Medical*
*Med.—Medicine*
*Nat.—National*
*Pharm.—Pharmaceutical*
*Phys.—Physicians*
*Soc.—Society*
*Surg.—Surgery*
*Surgs.—Surgeons*
*S.—Surgical*

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